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Biopiracy, or the Misappropriation of Traditional Knowledge for Profit: a Human Rights Perspective.

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ABSTRACT

Questo lavoro si pone un obiettivo specifico: determinare se la biopirateria possa annoverarsi tra le violazioni dei diritti umani. Per questo motivo, l'analisi proposta di seguito si concentra sulla sfera del diritto internazionale. Con biopirateria, si fa riferimento a un fenomeno recente, che è incrementato con lo sviluppo della globalizzazione. Come sarà precisato tuttavia, qualche episodio sporadico di biopirateria si è verificato anche in tempi passati, poiché l'interesse per le risorse del terzo mondo non è né nuovo, né recente. Per biopirateria s'intende l'appropriazione indebita di conoscenza tradizionale e risorse genetiche, per fini commerciali, che viene poi brevettata come nuova invenzione, istituendo così diritti di proprietà esclusivi sulla risorsa e la conoscenza.

Come si può evincere il fenomeno si configura particolarmente complesso, specialmente da un punto di vista giuridico. Infatti, una definizione prettamente giuridica manca, mentre ne esistono di diverse, proposte da svariati studiosi di biopirateria. È interessante considerare che, da molti esperti, il fenomeno sia considerato una degenerazione della prospezione biologica o bioprospezione. La prospezione è un processo di ricerca, che si configura come l'esplorazione del suolo per cercare metalli preziosi e petrolio, già quindi conosciuta e utilizzata in passato. Aggiungendo il prefisso "bio", ci si riferisce nello specifico all'esplorazione e ricerca di materiale biologico, che presenti specifiche proprietà biologiche e biochimiche, che possano avere un valore commerciale. Man mano che si procederà nell'analisi dei due fenomeni, sarà reso chiaro che i due non sono poi così differenti. Infatti, sebbene il concetto di bioprospezione faccia riferimento solo a "esplorazione", per le popolazioni indigene si tratta comunque di un'appropriazione indebita di risorse, che essi stessi hanno sviluppato e migliorato di generazione in generazione. In teoria quindi, la bioprospezione dovrebbe fermarsi alla mera ricerca ma così non è, poiché se la risorsa presenta delle caratteristiche e proprietà utili al commercio, viene poi elaborata e venduta. Sarà più avanti chiaro, come il confine con la biopirateria sia molto sottile in questi casi.

È bene anche riflettere sulla scelta del termine, che appunto figura il concetto di "pirateria" in esso. Naturalmente, la biopirateria si allontana dall'accezione più comune di pirateria, nello specifico, quella marittima, per avvicinarsi di più all'accezione moderna del termine. Infatti, soprattutto nell'era digitale, la pirateria si è evoluta da semplice pirateria marittima, per arrivare a coprire anche crimini quali l'appropriazione indebita del lavoro o opera di un dato autore, o come download illegale di musica e contenuti multimediali. Di certo, la biopirateria è più simile a queste moderne accezioni, presentando tuttavia un certo tipo di complessità che la contraddistingue.

La complessità del fenomeno della biopirateria è dovuta al fatto che sono diverse le aree che influenza. Nello specifico, l'appropriazione indebita di conoscenza tradizionale e risorse, il diritto dei brevetti, e in ultimo, come sarà dimostrato, i diritti umani. Per conoscenza tradizionale, si fa riferimento all'insieme di conoscenze, know-how's e tecniche che vengono sviluppate dalle popolazioni indigene e che costituiscono per loro una risorsa di incalcolabile valore. Come rilevato dal Comitato per i diritti umani,

la conoscenza tradizionale costituisce per le popolazioni indigene non solo un profondo valore culturale, ma anche un modo di vivere in molti casi, ed è quindi un sinonimo d'identità collettiva. Infatti, la conoscenza tradizionale è considerata come posseduta collettivamente, poiché sviluppata, coltivata e custodita dalla comunità nella sua totalità, e non da singoli individui. Motivo per cui, molti autori suggeriscono che il diritto della proprietà intellettuale, nello specifico quello dei brevetti, sia insufficiente a proteggere la conoscenza tradizionale, da un punto di vista giuridico.

Si può evincere dunque, come la conoscenza tradizionale abbia un profondo valore culturale, che rientra nel concetto di eredità culturale intangibile. Il profondo valore del patrimonio culturale intangibile tuttavia, non è stato fin da subito riconosciuto nei trattati internazionali. Infatti, la Convenzione sul patrimonio mondiale del 1972 proponeva due definizioni di patrimonio distinte, entrambe facenti riferimento a qualcosa di tangibile: il patrimonio culturale (nello specifico solo quello tangibile) e il patrimonio naturale. È interessante tenere in considerazione il fatto che, questa divisione tra patrimonio tangibile e naturale è stata fortemente criticata dalle popolazioni indigene, le quali hanno denunciato questa concezione come arbitraria e basata su un tipo di mentalità prettamente occidentale, che non tiene in considerazione il profondo legame che lega queste popolazioni con la loro terra, i loro diritti, ed il loro patrimonio culturale, tanto tangibile quanto intangibile. Finalmente, il patrimonio culturale intangibile ottenne riconoscimento giuridico internazionale grazie alla Convenzione UNESCO del 2003 sulla salvaguardia del patrimonio culturale immateriale, la quale ha finalmente equiparato l'importanza del patrimonio culturale intangibile con quello tangibile.

Prima di presentare la tesi principale sostenuta da questo lavoro, è importante soffermarsi sugli attori principalmente coinvolti dalla biopirateria: le popolazioni indigene, in questo caso le vittime; le multinazionali, o talvolta anche istituti di ricerca ed agenzie statali, i biopirati; ed in ultimo, il ruolo di ONG e Stati. La condizione delle popolazioni indigene dal punto di vista del diritto internazionale va sicuramente menzionata. Esistono due documenti, uno vincolante e l'altro no, che riconoscono i diritti delle popolazioni indigene: la Convenzione Nr. 169 dell'Organizzazione Mondiale del Lavoro, vincolante, e la Dichiarazione ONU sui diritti delle popolazioni indigene, non vincolante. La definizione fornita dalla Convenzione Nr. 169 è stata tuttavia criticata dalle popolazioni indigene, poiché inserisce come criterio per essere riconosciute come tali l'esperienza coloniale. Ovvero, sono ritenute indigene quelle popolazioni che hanno occupato un territorio specifico dello Stato ai tempi di occupazione o colonizzazione, o d'insediamento dello Stato attuale, e che comunque hanno mantenuto le loro istituzioni sociali, culturali e politiche. Tuttavia, la definizione rileva quanto sia importante il legame tra le popolazioni indigene e il loro territorio, tanto che una sezione intera della Convenzione Nr. 169 è dedicata ai cosiddetti diritti territoriali, che tra l'altro è quella caratteristica che separa e contraddistingue le popolazioni indigene da quelle tribali. Molto interessante da considerare per questa tesi è l'Articolo 15 della Convenzione, il quale garantisce alle popolazioni indigene il diritto di accesso, utilizzo e controllo

delle risorse legate alla propria terra, che quindi sembrerebbe essere compromesso dalla biopirateria, chiaramente nel momento in cui lo stato in cui vive la comunità indigena abbia ratificato la Convenzione. Il secondo documento che va menzionato è la Dichiarazione ONU sui diritti delle popolazioni indigene, che pur non essendo vincolante, ha ottenuto un grandissimo riconoscimento e all'epoca della sua adozione, nel 2007 è passata con quella che è stata definita una maggioranza schiacciante. È importante tenere in considerazione il fatto che la Dichiarazione ha posto l'accento in particolare sui diritti d'integrità culturale, e la sua protezione e rispetto. Inoltre, ancora una volta è ribadito il chiaro e profondo legame tra la cultura delle popolazioni indigene ed i loro diritti territoriali. Purtroppo però la Dichiarazione è appunto uno strumento non vincolante da un punto di vista legale, sebbene sia stato espresso grande interesse e impegno del rispettare i diritti e doveri che essa promuove. Va inoltre menzionato che, sebbene i diritti delle popolazioni indigene siano principalmente collettivi, essi sono comunque tutelati, in quanto individui dagli stessi diritti umani di cui chiunque ha il diritto di godere; nello specifico: quelli sanciti dai due patti internazionali sui diritti civili e politici, e sui diritti economici, sociali e culturali.

I biopirati, o chi commette atti di biopirateria, come sarà successivamente dimostrato, nella stragrande maggioranza dei casi, sono identificabili nelle aziende multinazionali, le cui azioni e crimini sono conosciute e riconosciute a livello internazionale. Tuttavia, il loro status giuridico nei confronti del diritto internazionale, e specificatamente la loro soggettività, è un tema che ancora divide la letteratura. La soggettività è chiaramente legata al tema della responsabilità delle multinazionali da un punto di vista del diritto internazionale. Come sottolineato da Carreau e Marella, si può sostenere che alle multinazionali sia stato riconosciuto un certo livello di personalità internazionale, in quanto possono concludere ad esempio contratti con gli Stati, ma le categorie giuridiche esistenti non sono sufficienti per affrontare la complessità dello status delle aziende multinazionali. Ma in che modo esse commettono atti riconosciuti come biopirateria?

È da sempre noto come le aziende multinazionali, in quanto tali, siano interessate al Sud del mondo, e ai paesi in via di sviluppo. La globalizzazione ha permesso e facilitato lo sviluppo del fenomeno della delocalizzazione, che ha portato alla ribalta le aziende multinazionali. Nel caso specifico della biopirateria, le aziende multinazionali, tramite loro dipendenti, o esperti, si recano nei paesi in via di sviluppo, cercando risorse e conoscenze che possano avere un certo potenziale commerciale. Una volta riconosciuta la risorsa, come dimostrano gli esempi dell'albero di Neem, il riso Basmati, il fagiolo Enola, e ancora l'artiglio del diavolo, la cassia amara, e la radice Rooibos, viene riportata nel paese sede della multinazionale, assieme alla conoscenza tradizionale che ha permesso lo sviluppo della risorsa, custodito e tramandato per generazioni dalle popolazioni indigene locali, e viene in seguito brevettato, ovviamente non facendo figurare tra gli inventori la popolazione indigena che ha originariamente sviluppato la risorsa. Il brevetto istituisce diritti di proprietà esclusivi per i possessori, impedendo quindi alle popolazioni che in realtà detengono tanto la risorsa quanto la conoscenza, di sfruttare liberamente ciò che

è patrimonio loro, poiché per farlo dovrebbero pagare i diritti di proprietà previsti dal brevetto: questi i tratti principali della biopirateria.

Il ruolo delle ONG, Organizzazioni Non Organizzate, in merito alla biopirateria è alquanto fondamentale. La personalità giuridica delle ONG in merito al diritto internazionale è più chiara rispetto a quello delle multinazionali: esse, infatti, non sono soggetti del diritto internazionale, e alcuni autori suggeriscono che il motivo sia che conferire loro la soggettività internazionale aumenterebbe il potere già consistente che hanno le ONG, e che non è né auspicabile né ben visto dagli stati, preoccupati appunto del potere che esse già hanno. Le ONG, infatti, hanno acquisito sempre più audience e risonanza presso la società civile, soprattutto grazie allo sviluppo dei diritti umani e della globalizzazione, e le loro attività e principi sono quindi spesso in grado di influenzare l'opinione pubblica. Questa loro abilità rende il rapporto con gli stati alquanto controverso: essi talvolta temono e osteggiano il lavoro delle ONG, ma proprio per questa loro abilità di influenzare possono essere vantaggiose agli stati. Per quanto riguarda la biopirateria, il contributo delle ONG è senza dubbio fondamentale: esse contribuiscono a promuovere la conoscenza riguardo ai pericoli del fenomeno sia a livello internazionale che a quello nazionale e locale, e contribuiscono ad esporre le multinazionali che si macchiano per l'appunto di biopirateria, ed allo stesso tempo contestano i brevetti negli appositi uffici.

In ultimo, il ruolo degli stati in merito alla biopirateria va menzionato. Talvolta, anche agenzie statali possono tacciarsi di biopirateria, ma non è questo il principale coinvolgimento degli stati. Essi, in quanto soggetti primari di diritto internazionale sono infatti i destinatari delle convenzioni e dei trattati che regolano alcuni aspetti che caratterizzano la biopirateria, come ad esempio la Convenzione sulla diversità biologica, e per questo hanno il ruolo fondamentale di garanti dei diritti e doveri imposti a livello internazionale. Inoltre, gli Stati hanno anche il ruolo di garanti dei diritti delle popolazioni indigene che vivono sul loro territorio, soprattutto quando si tratta di diritti umani. Quindi, è chiaro che il loro coinvolgimento non può e non deve essere sottovalutato.

L'argomento principale di questa tesi è che, i diritti culturali, come riconosciuto dalla Convenzione Internazionale sui diritti Economici, Sociali e Culturali, siano diritti umani inviolabili, che vanno garantiti e tutelati, nonostante siano spesso stati sottovalutati o non considerati al pari di altri diritti umani, come quelli di prima generazione ad esempio, o i diritti umani fondamentali. I diritti culturali, come ad esempio il diritto di accesso alla cultura, e il diritto di godere del proprio patrimonio culturale, tanto tangibile quanto intangibile, sono a tutti gli effetti diritti umani. La conoscenza tradizionale, in quanto elemento fondamentale del patrimonio intangibile, rientra nella sfera dei diritti culturali e diritti umani. Quindi l'appropriazione indebita, o il furto della conoscenza tradizionale costituisce una violazione del diritto di accesso alla cultura e del diritto di godere del proprio patrimonio culturale, costituendo quindi, una violazione dei diritti umani. Poiché dunque, la biopirateria si configura come l'appropriazione indebita o il furto di conoscenza tradizionale è quindi, a tutti gli effetti, una violazione dei diritti umani. Nello

specifico, se si considera che, il brevettare un'invenzione che risulta dal furto della conoscenza tradizionale, e che quindi figura tale conoscenza nella descrizione, fa sì che vengano istituiti diritti esclusivi sull'invenzione e, per esteso, sulla conoscenza, costituisce un'ulteriore impedimento al diritto di accesso e godimento del patrimonio culturale. Infatti, istituendo diritti esclusivi, che possono impedire ad altri di usufruire dell'invenzione, che deriva dallo sfruttamento della conoscenza tradizionale, è chiaro che la possibilità di accedere alla conoscenza sia ridotta e quantomeno impedita.

Ad ora, non esistono Convenzioni internazionali che affrontino il tema della biopirateria direttamente, dandone una definizione e creando un sistema atto alla repressione del fenomeno. Tale mancanza è stata denunciata da molti esperti di biopirateria ed esponenti di governi di paesi in via di sviluppo che si sono visti danneggiati dalla crescita di questo fenomeno. Il Segretario Generale della Convenzione sulla Diversità Biologica pubblicò un interessante saggio che mirava appunto a sottolineare l'importanza di agire a livello internazionale contro la biopirateria, ed il tema è stato dibattuto anche a livello del Parlamento Europeo e della Commissione Europea. Dall'altro lato, esistono Convenzioni internazionali come appunto, la Convenzione sulla Diversità Biologica (1992), che affrontano la questione dell'accesso alle risorse genetiche e relativa conoscenza tradizionale, e il Protocollo aggiuntivo di Nagoya, che affronta ancora più nello specifico l'accesso alle risorse genetiche e conoscenza tradizionale. È interessante notare che, alcuni dei rappresentanti di stati in via di sviluppo e di ONG al tavolo dei negoziati, approcciarono il dibattito con il preciso intento di reprimere la biopirateria, che nello specifico colpisce soprattutto i paesi in via di sviluppo, e, ancora più specificatamente, come già precisato, le popolazioni indigene.

La Convenzione sulla diversità biologica e il Protocollo addizionale di Nagoya, sono strumenti che mirano a regolare l'accesso alle risorse genetiche, ed istituiscono importanti meccanismi per far sì che tale accesso sia equo e giusto, e seguito da un ritorno in termini di benefici economici e non. Il protocollo inoltre stabilisce che prima dell'accesso debba essere garantito il consenso informato preventivo, che determina che gli Stati debbano prima richiedere il consenso delle popolazioni indigene che detengono le risorse e la conoscenza, per poter solo in seguito garantire l'accesso. Inoltre, una significativa differenza tra la Convenzione ed il Protocollo aggiunto è che mentre la prima afferma che siano gli Stati i detentori delle risorse, il Protocollo pur ribadendo l'importanza del rispetto del principio di sovranità nazionale, garantisce la possibilità che anche le popolazioni indigene possano essere riconosciute come detentrici delle risorse genetiche, e che quindi in tali casi il consenso informato preventivo sia necessario per procedere.

Tuttavia, casi di biopirateria si sono verificati anche in seguito all'adozione dei due documenti, che in teoria avrebbero dovuto tutelare alcuni degli aspetti che caratterizzano la biopirateria. Il motivo principale per cui questo è accaduto, non è dovuto tanto al fatto che il sistema creato in capo alla Convenzione ed al Protocollo non sia sufficientemente efficace o ben strutturato, ma più che altro alla difficile implementazione delle disposizioni e meccanismi da parte degli stati, specialmente quelli in via di

sviluppo. Ergo, ancora una volta si può evincere come il ruolo degli stati sia particolarmente cruciale nel contrastare la biopirateria. Inoltre, la mancanza di conoscenza dei diritti delle popolazioni indigene ha contribuito a facilitare la diffusione del fenomeno, mentre il Protocollo prevede espressamente delle attività di sensibilizzazione sul tema.

È importante porre l'accento sul fatto che secondo alcuni studiosi, esistono delle importanti inconsistenze tra la Convenzione sulla Diversità Biologica e l'accordo TRIPS. Da un punto di vista prettamente giuridico, nello specifico del diritto internazionale, non esiste incompatibilità tra i due documenti. Infatti, l'Articolo 16 della Convenzione è propriamente dedicato al legame tra le disposizioni del trattato e la proprietà intellettuale, stabilendo che tali disposizioni ed il diritto dei brevetti debbano essere interpretati alla luce delle regolamentazioni nazionali ed internazionali, in modo tale da evitare conflitti. Tuttavia, secondo diversi autori ed esperti, i due trattati sono incompatibili su diversi fronti, come per esempio negli obiettivi stessi, che sono definiti antitetici. Scopo dei TRIPS è di armonizzare il diritto della proprietà intellettuale, che si pone come scopo quello di stabilire diritti esclusivi e privati anche su materiale biologico, mentre la Convenzione si pone l'obiettivo di salvaguardare e proteggere tali risorse, considerate pubbliche, ed anzi, una risorsa preziosa per l'umanità intera, facendo così scaturire un conflitto tra i due trattati.

Alcuni studiosi hanno proposto come soluzione possibile alla biopirateria, la protezione della conoscenza tradizionale attraverso i brevetti. Tuttavia, si tenterà in seguito di dimostrare che la protezione della conoscenza tradizionale che i brevetti dovrebbero in teoria offrire non è sufficiente. Il motivo principale di tale incompatibilità è dovuto al fatto che il diritto dei brevetti prevede come caratteristica fondamentale quella di riconoscere un autore dell'invenzione e che ha, quindi, "prodotto" la conoscenza, mentre nel caso di quella tradizionale e delle popolazioni indigene, essa è detenuta dalla collettività, rendendo quindi impossibile individuare un autore specifico. Inoltre, in quanto tradizionale, la conoscenza si può identificare come arte preesistente, quindi come qualcosa di già noto e conosciuto, che mancherebbe quindi i criteri fondamentali di novità e innovazione per la concessione del brevetto. Sicuramente a sostegno di questa tesi è il fatto che l'Organizzazione Mondiale della Proprietà Intellettuale stia negoziando e redigendo un documento ad hoc, che istituisca delle nuove regole in merito alla protezione della conoscenza tradizionale secondo le regole del diritto della proprietà intellettuale. Ciò è sintomo del fatto che le norme ad ora in atto non sono sufficienti a garantire una protezione efficiente ed efficace della conoscenza tradizionale.

Dunque, quali sono gli strumenti che le popolazioni indigene o gli stati hanno a disposizione per reprimere la biopirateria? Essi sono principalmente di due tipi, e si possono attuare o a livello nazionale o a livello locale. Per quanto riguarda la prima tipologia, due stati, India e Perù, particolarmente colpiti dalla biopirateria, a causa della loro grande ricchezza di biodiversità e conoscenza tradizionale, hanno attuato dei meccanismi per prevenire il fenomeno nel modo più efficace possibile. Nel caso dell'India, il

governo, dopo anni di strenua battaglia per far ritirare dall'Ufficio Brevetti degli Stati Uniti due brevetti che riguardavano risorse genetiche e conoscenza tradizionale tipiche dell'India, attraverso il Dipartimento di Medicina E Omeopatia ha deciso di istituire la Libreria Digitale della Conoscenza Tradizionale. Questo meccanismo consta di un software estremamente innovativo che permette di catalogare tutta la conoscenza relativa a metodi e pratiche medicinali, omeopatiche ed ayurvediche indiane. Esso è dunque un database consultabile online di tutta la conoscenza già esistente. Questo software ha permesso una più semplice classificazione della conoscenza tradizionale e il suo riconoscimento secondo gli standard della Classificazione Internazionale dei Brevetti. L'innovazione portata dalla Libreria Digitale sviluppata dal governo indiano ha inoltre condotto a un miglioramento della Classificazione Internazionale stessa. Dalla sua attuazione, il sistema creato dalla Libreria Digitale ha permesso di identificare e confutare 215 brevetti che contenevano al loro interno conoscenza tradizionale indiana.

L'esperienza del Perù è invece caratterizzata da due elementi: una legislazione atta a prevenire e reprimere la biopirateria proteggendo la conoscenza tradizionale del paese e la creazione di una commissione anti-biopirateria ad hoc. La legislazione attuata in Perù è stata il risultato di un processo di cooperazione tra vari stati dell'America Latina, i quali già nel 1996 costituirono la cosiddetta Comunità Andina, per essere in grado di attuare efficacemente le disposizioni della Convenzione sulla Diversità Biologica. La cooperazione è uno strumento importantissimo nel reprimere qualsiasi atto illecito e anche valido quindi nel caso della biopirateria. La Comunità Andina attuò inoltre un regime comune che garantiva alle popolazioni indigene il diritto di decidere le condizioni con le quali concedere l'accesso alle proprie risorse e relativa conoscenza, o nel caso anche di rifiutarlo. In seguito a questo regime comune, il governo del Perù ha deciso di sviluppare anche una legislazione interna che proteggesse la conoscenza tradizionale peruviana. È importante sottolineare che nel processo di preparazione della legislazione, anche le popolazioni indigene sono state coinvolte, tramite delle consultazioni. Il coinvolgimento delle popolazioni indigene è fondamentale, come ribadito anche dal Protocollo di Nagoya, nel redigere norme e meccanismi che si occupino effettivamente di rispettare e proteggere i loro diritti, risorse e conoscenze.

La legislazione approvata dal governo peruviano protegge la conoscenza tradizionale delle popolazioni indigene che sono riconosciute come detentori effettivi della stessa. La conoscenza è riconosciuta come valore collettivamente posseduto, e non individualmente, quindi la legge è volta a riconoscere e proteggere i diritti collettivi delle popolazioni. Poco dopo la sua adozione, il governo peruviano ha attuato una successiva misura di prevenzione della biopirateria: è stata costituita, infatti, la Commissione Nazionale Contro la Biopirateria, il cui scopo è quello di condividere report con l'Organizzazione Mondiale della Proprietà Intellettuale e l'Organizzazione Mondiale del Commercio per migliorare il sistema dei brevetti in base all'esperienza del paese, e chiaramente ha anche l'obiettivo di identificare i casi di biopirateria che colpiscono le risorse del paese.

Una soluzione che si può attuare a livello locale è rappresentata dai Protocolli Bio-Culturali. Essi si possono intendere come veri e propri protocolli che stabiliscono diritti e doveri secondo il diritto consuetudinario, nazionale ed internazionale come base per interagire con attori esterni, chiarendo allo stesso tempo i valori, i principi e le priorità delle comunità indigene coinvolte. Ciò che è interessante di questo aspetto è duplice: innanzitutto, questa soluzione è attuabile dalle popolazioni indigene tramite l'aiuto di un rappresentante legale, ed essi stessi diventano quindi più consci e consapevoli dei loro diritti e doveri, e sono inoltre in grado di tutelarsi da sé, senza che lo stato debba intercedere per loro. L'altro aspetto sicuramente importante è dato dal fatto che i protocolli bio-culturali sono menzionati anche dal Protocollo di Nagoya, come strumento che deve essere valutato per la protezione delle risorse genetiche e della conoscenza tradizionale, poiché coinvolge le popolazioni indigene stesse, fattore che, come già sottolineato, è di fondamentale importanza per una tutela efficace.

Un'alternativa possono anche essere i contratti o le ricerche collaborative, ovvero delle partnership di ricerca in cui le popolazioni indigene sono coinvolte attivamente e trattate al pari di esperti. Oppure ancora, le linee guida per la ricerca, come quelle sviluppate dalla popolazione indigena dei Kuna di Panama, in collaborazione con alcune agenzie statali. Queste linee guida stabiliscono appunto dei principi secondo i quali si può accedere alle risorse e conoscenze dei Kuna. Esse prevedono, ad esempio, l'elaborazione di un piano d'impatto ambientale e culturale, nonché temporale, e in seguito l'elaborazione di report periodici sull'andamento delle attività; e includono anche una richiesta specifica, ovvero che i Kuna vengano trattati da esperti e informati in merito alle conoscenze tecniche e scientifiche adoperate. I benefici che quindi vengono inclusi nelle linee guida non sono solo di tipo materiale, ma anche immateriale. Tali soluzioni possono essere facilmente attuate dalle popolazioni indigene, dando così loro più consapevolezza e potenziando allo stesso tempo le loro capacità.

L'ultimo aspetto che va menzionato, come conclusione, è il considerare perché stabilire che la biopirateria sia, a tutti gli effetti, una violazione dei diritti umani, sia effettivamente importante. Le violazioni dei diritti umani, nonostante la dottrina si sia sviluppata significativamente, sono ancora molto comuni e diffuse. Nonostante i meccanismi di esecuzione a livello nazionale o regionale siano altrettanto sviluppati, le violazioni continuano. Inoltre, le violazioni dei diritti culturali sono spesso sottovalutate, e non tengono quindi in considerazione il profondo valore che in realtà la cultura ha, specialmente per le popolazioni indigene, poiché la cultura spesso coincide con la loro identità e stile di vita. Il vedersi privati della propria cultura equivale al vedere la propria identità e stili di vita spossessati del loro profondo ed imprescindibile valore. Inoltre, è un fatto riconosciuto che spesso le violazioni dei diritti umani siano connesse, e che quindi spesso non sia violato un solo diritto, ma che s'innesti una sorta di reazione a catena. Lo stabilire che la biopirateria è una violazione dei diritti umani è quindi un mezzo per restituire quella dignità legata alla propria cultura e conoscenza, che queste comunità si vedono rubare e portare via senza nessuna forma di riconoscimento. Il fatto poi che un brevetto impedisca alle comunità indigene di

poter accedere ed usufruire delle proprie risorse, ma soprattutto della propria conoscenza se non attraverso un compenso economico, ovvero il fatto di dover pagare per poter usufruire di qualcosa che non solo è già loro, ma che li definisce e che loro stessi hanno coltivato e protetto, è di certo un fattore che lede la dignità, che gli può essere anche se forse solo moralmente, restituita, stabilendo che la biopirateria è, a tutti gli effetti, una violazione dei diritti umani.

TABLE OF ABBREVIATIONS

ABS: Access and Benefit-Sharing

BPGs: Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law

CBD: Convention on Biological Diversity

CGIAR: the Consultative Group for International Agricultural Research

CHS: Convention on the High Seas

CIAT: International Centre for Tropical Agriculture

CSIR: South African Council for Scientific and Industrial Research

ECOSOC: Economic and Social Council

EPO: European Patent Office

ETC Group: Erosion, Technology and Concentration Group

EU: European Union

FAO: Food and Agricultural Organization

GR: Genetic Resources

HRC: Human Rights Committee

IBRD: International Bank for Reconstruction and Development

ICCPR: International Covenant on Civil and Political Rights

ICESCR: International Covenant on Economic, Social and Cultural Rights

ICH: Intangible Cultural Heritage

IFOAM: International Foundation of Organic Agriculture Movements

IDI: Institut de droit international

IGC: Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore

IK: Indigenous Knowledge

IKS: Indigenous Knowledge Systems

ILO: International Labour Organization

INDECOPI: National Institute for the Defence of Competition and Intellectual Property

IP: Intellectual Property

IPRs: Intellectual Property Rights

IRRI: International Rice Research Institute

ITPGRFA: International Treaty on Plant Genetic Resources for Food and Agriculture

IUPGRs: International Undertaking on Plant Genetic Resources

LK: Local Knowledge

MAT: Mutually Agreed Terms

MNCs: Multinational Corporations

MTA: Material Transfer Agreement

PEMASKY: Proyecto de Estudio para el Manejo de Areas Silvestres de Kuna Yala

PIC: Prior Informed Consent

RAFI: Rural Advancement Foundation International

RFSTE: Research Foundation for Science, Technology and Ecology

SUA: Convention for the Suppression of Unlawful Acts of Violence against the Safety of Maritime Navigation

TCNs: Transnational Corporations

TK: Traditional Knowledge

TKDL: Traditional Knowledge Digital Library

UDHR: Universal Declaration of Human Rights

UK: United Kingdom

UN: United Nations

UNCLOS: United Nations Convention on the Law of the Sea

UNDRIP: United Nations Declaration on the Rights of Indigenous People

UNESCO: United Nations Educational Scientific and Cultural Organization

UNGA: United Nations General Assembly

UNGC: United Nations Global Compact

UNSC: United Nations Security Council

US/USA: United States of America

WB: World Bank

WIPO: World Intellectual Property Organization

WHC: World Heritage Convention

INTRODUCTION

The present work aims at answering a very specific question: namely, whether biopiracy can be enumerated among human rights violations. The phenomenon of biopiracy is a rather recent one for the international community, although not entirely new, as it will be described. The concept describes the misappropriation of traditional knowledge belonging to indigenous people, which is later patent for commercial purposes. Nonetheless, biopiracy cannot be fully understood, without first outlining the main features of piracy. This phenomenon on the other hand, dates back to ancient times, as pirates were already known during Roman times, thus when civilisation was starting to flourish¹.

However, according to Rediker, the momentum of piracy focuses on a very short and specific period of time: specifically, the ten years between the 1716 and 1726. This was the period in which the most famous and acclaimed pirates sailed through the seas. This short window of time, can be divided into three main stages: the first one, starting from 1713 after the signing of the Utrecht Peace and ending in 1717, marking piracy as an international problem. The second stage, starting in 1717 and ending in 1722, can be considered as the golden age of piracy, when the most famous pirates as Blackbeard, William Fly and Bartholomew Roberts started to gain fame, and lastly, the third and final stage of the momentum of piracy, ended in 1726, marking the defeat of the most famous captains of pirate ships ever known².

What is interesting about these pirates, is manifold: first of all, the main reason why in that period pirate ships were born and grew both in number and in reputation, was due to the shameful conditions in which sailors had to live, and to the harsh treatment that superiors accorded to their subordinates. Very quickly, pirates became the symbol of class struggles, and after years they became also cultural heroes, who valued honesty as their highest quality³. Interestingly, pirates had a very rigid structure among their ships, and a quite developed form of democracy, according to which everyone had the right to be a member of the General Council, the body taking care of the decisions regarding the well-being of the ship. The captain only had absolute and uncontested power in case of assault and battle. He did not even have the power to decide how the bounty was supposed to be divided and shared: that was the duty of the quartermaster to administer⁴.

Even more interesting, is the fact that not only did pirates target commercial ships; they did also target those ships, which were involved in slave trade, thus freeing and sometimes taking in many freed slaves. Some scholars assert that it was due to the fact that ships carrying slaves were quite furnished with food and precious metals, and that pirates could count on the help of the slaves to take over the

¹ M. KEMPE, *Even in the remotest corners of the world': globalized piracy and international law, 1500–1900*, Journal of Global History, London School of Economic and Political Science, 2010, p. 357-358.

² M. REDIKER, *Canaglie di tutto il mondo*, Elèuthera, Milan, June 2016, p. 44.

³ *Ibid.* p. 11.

⁴ *Ibid.* p. 79.

ship; while some others state that since pirates basically embodied a class struggle aiming at making every men free, they tried to demolish every symbol of supremacy over people⁵. This kind of heroic aura, which surrounded pirates, developed throughout time, resulting in many heroic novels subverting the common notion that pirates were animals, beasts, or creatures of Satan and enemies of mankind. Of course, this does not erase the crimes, which they committed, but it surely does give an idea of the huge difference with modern day piracy, and with biopirates.

As a matter of fact, piracy evolved, moving away from the sole sea related phenomenon, and became also a crime of the digital era. Piracy, even though known for long, has lacked a proper definition until the adoption of UNCLOS, the Convention on the Law of the Sea, thanks to the efforts of the United Nations. It will be demonstrated how the concept evolved in the modern era, and began to be associated with the misappropriation or the unauthorized use of someone's production or invention⁶. But where is the connection with biopirates and biopiracy? The heroic tone that pirates had gained from the past does not surround also nowadays biopirates, which are, in most cases, embodied by transnational corporations. Biopirates nowadays certainly lack the same democratic inner organizations, and they certainly do lack the same dislike towards slavery and exploitation.

After having provided a brief introduction of piracy, I would like to provide an insight on the main features of biopiracy. Although lacking an agreed upon, and most importantly, legal definition, biopiracy has been recognised as featuring the misappropriation of traditional knowledge and genetic resources for commercial purposes, which are later patented in order to grant the alleged inventor exclusive rights over the invention; even though, as it will be demonstrated, there is clear evidence of the fact that the knowledge was already there, which would usually prevent a patent application from being granted⁷. Therefore, biopiracy is a complex phenomenon, which entails several dimensions: the traditional knowledge and genetic resource dimension, which is related to indigenous people, usually the victims, and with transnational corporations, usually the perpetrators, and the patent dimension. There is one last dimension, which is that of human rights, which should be mentioned, as it is the aim of this dissertation to demonstrate that biopiracy actually entails a violation of human rights, namely cultural rights. Before providing an overlook to the structure of this dissertation, I would like to briefly introduce all the aforementioned aspects constituting the complexity of biopiracy.

First of all, biopiracy entails a form of misappropriation, both of knowledge and of genetic resources. According to the World Intellectual Property Organization, genetic resources “*refer to genetic material of actual or potential value. Genetic material is any material of plant, animal, microbial or other*

⁵ M. REDIKER, *Canaglie di tutto il mondo*, Elèuthera, Milan, June 2016, p. 148-149.

⁶ L. AZUBUIKE, *International Law Regime Against Piracy*, Annual Survey of International and Comparative Law, Vol. 15, Issue 1, Art.4, 2009, p. 44.

⁷ C. HAMILTON, *Intellectual property rights, the bioeconomy and the challenge of biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 2.

origin containing functional units of heredity". Examples of genetic resources may include material of animals, for instance animal breeds; material of plants, such as medicinal plants; or material of microbiological origin⁸. Traditional knowledge on the other hand, which has also been referred to as indigenous knowledge, although this second term is narrower, has been defined by the UN Economic and Social Council as complex bodies and systems of knowledge and know-hows, which belong and have been developed by indigenous people generation over generation. Nonetheless, traditional does not have to be associated with ancient, but more as belonging to and characterising a specific group over time⁹.

Both traditional knowledge and genetic resources involve indigenous people, which are the owners of knowledge and in most cases, also the owners of the genetic resources, in theory or from a moral perspective, although that actually changes according to the law. Their condition has been debated for a long time, and recognition came only in the 1950s thanks to the International Labour Organization, which became aware of the condition of native populations as they were referred to, and drafted a Convention concerning their protection. From that moment on, the increasing recognition of indigenous people became a debated topic also among other international organizations and the UN, culminating in two crucial documents: ILO Convention No. 169 (1989) and the United Nations Declaration on the Rights of Indigenous People (2007), which will later be extensively explained¹⁰. Their history is nonetheless dominated by colonization, occupation and exploitation, although associated with fierce resistance and cooperation among themselves and those institutions willing to listen to them. Unfortunately, within this dissertation, their condition will not be uplifted. It will still be a history marked by exploitation, since indigenous people and farmers are the primary victims of biopiracy. Victims of whom?

Most of biopiracy activities are carried out by transnational corporations (TNCs), which move to the South or to developing countries, looking for resources to access and use, and more specifically, to exploit. This dissertation does not aim at targeting transnational corporations as "the evil", but there is quite an amount of evidence (some of it will be presented in the case studies), demonstrating that many TNCs do exploit resources and knowledge belonging to populations in developing countries without fair compensation. Their activities in regards to biopiracy, namely misappropriating traditional knowledge in order to later patent it as their own will be demonstrated to be not only against international treaties, but also a form of human rights violation. As a matter of fact, as it will be explained, patents create exclusive rights for the owners of such patents, which would prevent others from using and accessing the knowledge freely, thus hindering indigenous people's rights to maintain,

⁸ World Intellectual Property Organization's website: <https://www.wipo.int/tk/en/genetic/>

⁹ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 64.

¹⁰ *Ibid.*

develop and control their cultural heritage¹¹. In this regard therefore, it is important to remember, that biopiracy is also a cultural phenomenon.

The second crucial dimension, in order to fully understand biopiracy, is the issue of patents. The patent system is another complex topic, which has evolved throughout history. Patents have been incorporated within intellectual property law, which can be described as legal regimes that create private property rights over intangible aspects¹². What this dissertation will try to demonstrate is that in many occasions patents are used as a means enhancing biopiracy, rather than preventing or countering it. As a matter of fact, patents are a fundamental step of the process of biopiracy, because biopirates tend to patent their alleged inventions, after having collected (or stolen) the knowledge and resources¹³.

The patent system indeed is rather complex and depends on national regulations, thus, even though several treaties have been adopted at the international level to regulate intellectual property issues and rights, most of the patent systems change according to national or regional law. The TRIPS have been the international attempt to harmonize national standards for intellectual property protection, by aligning the international norms with methods employed at national level¹⁴. Indeed, many of the case studies later described, will propose discrepancies among patent systems and more specifically, how the United States' patent system seems to be more eager to grant patents to its national applicants, and how difficult it is to withdraw them once granted. Nonetheless, the focus of this dissertation will not be that of analysing biopiracy from a strict patent perspective, which has already been recognised and assessed by many scholars, but more fairly, it will try to present biopiracy from a human rights perspective. For this reason, human rights can be described as the third and final dimension of biopiracy.

In regards to human rights, a few words should be dedicated to their development and importance. Interestingly, the resonance that human rights have gathered until today is quite recent. As a matter of fact, many consider Enlightenment as the cradle of modern human rights, but as Moyn points out, the conceptualisation of universalism that belonged to Enlightenment, was quite distant from contemporary human rights. Indeed, the modern concept of human rights transcends States, which on the other hand were the necessary construct, even achieved through revolution, for the rights as conceptualized by Enlightenment thinkers. As Moyn asserts: "*Unlike later human rights, however,*

¹¹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights*, Farida Shaheed, A/HRC/17/38, March 21st, 2011, p. 12.

¹² United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights*, Farida Shaheed: *Copyright policy and the rights to science and culture*, A/HRC/28/57, December 24th, 2014, p. 5.

¹³ C. HAMILTON, *Intellectual property rights, the bioeconomy and the challenge of biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 2.

¹⁴ K. A. KELTER, *Pirate Patents: Arguing for Improved Biopiracy Prevention and Protection of Indigenous Rights Through a New Legislative Model*, Suffolk University Law Review, Vol. XLVII, 2014, p. 376.

*they were deeply bound up with the construction, through revolution if necessary, of state and nation.*¹⁵”

Therefore, the modern concept of human rights is of quite recent formation, as for the 19th century and the modern day history, the most important rights, which needed to be protected, were property rights. This is a rather interesting aspect to consider in light of this dissertation, which will try to outline the difficulty of enforcing rights and duties, for instance those deriving from the Convention on Biological diversity, or the rights of indigenous people, or human rights, over property rights. As a matter of fact, one of the first events, which witnessed the gathering together of States worldwide, not regarding peace or territorial matters, was the adoption of the Paris Convention of 1883, establishing the internationalization of patents: thus, a treaty regarding property protection¹⁶.

Human rights thus entered the international arena quite late, and when the term entered the English language, Moyn states, it was almost by accident and unceremoniously. They were a sign of hope for a post-war new order, completely detached and opposite to the tyrannical order conceptualized by Hitler. Nonetheless, they were not a response to the Holocaust, and for that, they were not focused on the prevention of mass slaughter and genocide, which is still a very complex and debated matter. It was not until the 1970s, that human rights became a priority of international law, and also during its birth and drafting period, human rights were not a priority¹⁷. As a matter of fact, the Dumbarton Oaks documents, which were the outcome of the Conference held at Dumbarton Oaks in Washington D.C. in 1944, when the United Nations were being shaped and negotiated by international leaders, human rights were but a footnote, no more than a promise on paper. When the Universal Declaration of Human Rights was adopted in 1948, it was undoubtedly a huge diplomatic achievement, but it remained for quite some time no more than that, a promise on paper, according to Moyn¹⁸. Indeed, the UDHR was “nothing more than a declaration”, thus not legally binding. Moreover, unfortunately, soon after its adoption, human rights discourses became biased, as they became to be associated with anticommunism. They started to be used in international fora and at the United Nations as an instrument to counter communism¹⁹.

Only in the 1970s, in Europe, human rights gained their momentum. Contrary to what many may think, it was not due to the enhancement of globalization, but mostly it was due to the need to transcend the nation-state paradigm and to embrace a more globalized perspective. The human rights movement thus became extremely significant, and NGOs started to proliferate, and the symbol of this new era for human

¹⁵ S. MOYN, *The Last Utopia: Human Rights in History*, United States of America, Belknap Press of Harvard University Press, 2010, p. 20.

¹⁶ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 17.

¹⁷ S. MOYN, *The Last Utopia: Human Rights in History*, United States of America, Belknap Press of Harvard University Press, 2010, p. 178.

¹⁸ *Ibid.* p. 68.

¹⁹ *Ibid.* p. 71.

rights, was embodied by the birth of the European Court of Human Rights in Strasbourg. In this period, Holocaust memory and genocide prevention became actually central and crucial in human rights discourses. “*Born of the yearning to transcend politics, human rights have become the core language of a new politics of humanity that has sapped the energy from old ideological contests of left and right.*”²⁰

The significance that human rights have nowadays is undeniable, although their enforcement is far from being perfect. The social relevance that human rights have is also unquestionable, and this is one of the many reasons, why assessing human rights violations, is so important, especially in regards to economic, social and cultural rights. As second generation rights, and especially cultural rights, they have often been disregarded and given less attention than many other rights. Nonetheless, cultural rights, which often represent and embody a way of living, especially for indigenous people and minorities, or safeguard and shape collective identity, are as fundamental to human dignity, as any other human right²¹. Hence, the aim of this dissertation: it will be demonstrated how biopiracy actually entails, or is, a violation of cultural rights for indigenous people, by preventing them access and use of their own traditional knowledge, which, as a fundamental aspect of intangible cultural heritage, is covered by human rights.

After having established the fundamental connection between human rights and biopiracy, I would like now to provide a brief overlook to the structure of this dissertation. The first chapter is dedicated to the analysis of the evolution of biopiracy, starting from a through scrutiny of the concept of piracy, both maritime piracy and modern day piracy, which both present different features, but remain similar in their true nature, namely that of a theft or misappropriation. Later on, the chapter will try to establish the connection between piracy and biopiracy, which lies precisely in the very nature of the concept. It will also try to present the concept of bioprospecting, which, according to many scholars and biopiracy experts, is nothing but another word for biopiracy.

The second chapter will, on the other hand, deal with the actors mostly involved in the process of biopiracy: firstly, the role of State and individuals will be analysed, since States, as primary subjects of international law, have the duty of enforcing the provisions of international treaties, such as the Convention on Biological Diversity for example, and to protect and safeguard the rights of their citizens. Individuals, on the other hand, have not been recognised as subjects of international law yet, but the increasing accent on human rights law has determined a shift in the attention put on individuals also under international law. Afterwards, the condition of indigenous people will be tackled, with a particular focus on their status, their rights, and the value that traditional knowledge has for them. The role that indigenous people play in the context of this dissertation is unfortunately that of victims of biopiracy, since their knowledge is the one misappropriated and taken away from them. As it was

²⁰ S. MOYN, *The Last Utopia: Human Rights in History*, United States of America, Belknap Press of Harvard University Press, 2010, p. 227.

²¹ Council of Europe’s Website: <https://www.coe.int/web/compass/the-evolution-of-human-rights>

already stated, traditional knowledge for indigenous people transcends the mere economic value, as well as the cultural one, shaping their very collective identity and way of living. After indigenous people, transnational corporations will be evaluated, especially their condition under international law. The subjectivity of TNCs is a very debated topic in international law literature, since they are not yet recognised as subjects of international law, even though they do operate transnationally. Their role will be that of perpetrators of biopiracy activities, thus committing the misappropriations and the human rights violations related to it. Lastly, in contrast to the role of perpetrators of TNCs, NGOs will be considered as supporters of indigenous communities in the fight against biopiracy, by raising awareness over the issues and over indigenous rights, and by exposing TNCs or State institutions, which have actually engaged in biopiracy activities.

The third chapter will provide an extensive analysis of the existing international legal system, although, as it will be explained, there is no Convention precisely addressing and defining biopiracy so far. The nearest example of a treaty aiming at preventing biopiracy is the Convention on Biological Diversity and the additional Nagoya Protocol, which are dedicated to regulating access to biological diversity and traditional knowledge, as well as their protection and sustainable use. Most importantly, the Nagoya Protocol established a system of access and benefit sharing, as well as fair compensation for the access and use of traditional knowledge and genetic resources belonging to indigenous people. This system is the nearest example of international prevention of biopiracy, although not specifically targeting and defining the issue, but mainly its crucial dimensions.

The following section of the chapter will investigate patents, by providing initially a brief analysis of the international regime related to intellectual property rights. Next, the TRIPS agreement will be evaluated, focusing particularly on article 27, which has been identified by some experts as enhancing biopiracy. Article 27 provides the criteria set internationally for the granting of patents, and patentable subject matter, namely what resources can be eligible for patenting. The vague language of article 27, which does not establish clearly patentable subject matter, is a means allowing and not preventing nor redressing biopiracy. Later on, the incompatibility between the TRIPS and the CBD will be tackled, and inconsistencies between the two documents will be evaluated, which surely do not contribute to the prevention of biopiracy.

Finally, the chapter will consider the development of human rights and cultural rights, and related international documents assuring their respect and protection, such as the International Covenant on Economic, Social and Cultural Rights. Also, Intangible Cultural Heritage (ICH) needs to be given attention, as it establishes the clear and undeniable connection with biopiracy and human rights. As a matter of fact, traditional knowledge is part of the Intangible Cultural Heritage, especially in the case of indigenous people, and therefore TK is covered by human rights, as fundamental element of the

ICH of different peoples. Thus, preventing its access or use constitutes a violation of human rights, as it will be extensively explained in chapter 4.

Chapter 5 will cover the issues of patents and TK, demonstrating that patent protection is insufficient when it comes to TK protection, and later providing the proof that biopiracy actually violates human rights, thus confirming the main argument of this dissertation. Later on, the chapter will focus on feasible solutions to redress biopiracy: mechanisms enacted by States, such as the Indian and the Peruvian examples, and solutions carried out by indigenous communities, who need to protect themselves in the event that States will not be able to do it. The last and final chapter, before the conclusion, will be dedicated to the case studies, namely examples of actual biopiracy cases, which will serve as a means to demonstrate what will be stated throughout this dissertation: that biopiracy consists of a misappropriation of traditional knowledge resulting in a human rights violation and that the patent system is not a means to prevent biopiracy, but often rather to further it.

CHAPTER 1: THE EVOLUTION OF BIOPIRACY

1. The notion of piracy

Communis hostis omnium, as well as *hostes humani generis* (namely enemies of all peoples), were two general phrases used to identify piracy in the past, which stress the idea that pirates were considered to be not only dangerous for a particular population, but for humankind in general. The first ever to use such words was the Roman philosopher and statesman Cicero, in his work *De Officio*, to underline the perilousness of pirates, as well as the need to join forces in order to repress those unlawful acts²². What is of interest here is the fact that piracy is a long-time practice, which has hardly ever ended, notwithstanding the efforts to put an end to it. As the words of Cicero demonstrate, piracy existed at the times of the ancient romans, but it was surely born even before that period. The practice of committing piracy grew parallel with the development of maritime navigation, and during certain epochs it was condoned and tolerated by governments²³. It became quite pronounced during the 17th and 18th centuries, when the wars between England, Spain and France broke out. At the beginning of the 21st century instead, the illusion that piracy had been eradicated was overthrown, with the growing number of reports of piratical incidents off the coasts of Somalia and the Gulf of Aden²⁴.

Clearly, the international system had to adapt to the changes in maritime piracy and tried to cope with the issue in several occasions, which will be later discussed in this chapter. Nonetheless, what should be also noticed is that the concept of piracy (in the past referring only to maritime piracy) has developed throughout the years, and evolved from mere maritime piracy. As a matter of fact, nowadays we are often faced with the issue of digital piracy, and the unauthorized use of a copyright work²⁵.

The aim of this chapter is to analyse the definitions of piracy and the international law system, which was created to restrain it, and then to identify the connection with the concept of biopiracy.

²² M. KEMPE, *Even in the remotest corners of the world': globalized piracy and international law, 1500–1900*, Journal of Global History, London School of Economic and Political Science, 2010, p. 357-358.

²³ L. AZUBUIKE, *International Law Regime Against Piracy*, Annual Survey of International and Comparative Law, Vol. 15, Issue 1, Art.4, 2009, p. 45.

²⁴ *Ibid.*

²⁵ L. OWEN, *Piracy*, Learned Publishing, Vol. 14, January 21st, 2001, p. 67-70.

1.1 Definitions and international law regime against piracy

Even though maritime piracy is not a practice that has developed only recently, the codification of a definition recognised universally at the international level has been achieved quite late. The first ever who attempted to tackle with a legal definition to be used in the international legal framework, was the Italian jurist Alberico Gentili during the Renaissance. Gentili simply resumed Cicero's definition, stressing the common idea that pirates were enemies to all nations²⁶. Such a concept had not changed since the Roman age, and there is evidence that even during the Middle Ages pirates and corsairs were perceived as being enemies of humankind, and that idea at the very core of the concept of piracy did not alter not even when the first attempts of international codification were drafted²⁷. Nonetheless, there is an important difference between pirates and corsairs: the word pirate comes from the Greek "peiratēs", which means brigand or outlaw, while corsairs is a synonym of privateers, although more tied to the Mediterranean sea as commonly referred to the conflict between Christian and Muslim powers. Privateers were pirates with papers, since they were provided with documents by governments who allowed them to carry out piratical activities as quasi-military actions²⁸.

Before engaging in the analysis of the definitions provided by international law, it is important to differentiate between two concepts. As a matter of fact, as it was previously anticipated in the introduction, the general term *piracy* is excessively broad, as it both refers to maritime piracy and digital piracy. Therefore, it is important to bear in mind the fact that both are usually identified with the same term, even if they refer to two different practices.

The unauthorized use of someone's production or invention is the more recent aspect of the notion of piracy²⁹. This form of piracy can come in two different shapes: traditional piracy of copyright works and digital piracy. The first one refers to the illegitimate use or reproduction of a copyright work, and usually applies to those cases which take place in countries parties to either the Universal Copyright Convention of 1952, or the Berne Convention of 1971³⁰. For instance, none of the two documents provide in their articles any definition of piracy or rule to repress it, and in many occasions, unfortunately, the membership to one or both conventions does not grant the compliance to the norms prescribed³¹. For instance, even if Thailand is a member of the Berne Convention, the country remains a problematic area, with a 30% of college books being pirated every year³². As a matter of fact, the illegitimate use happens in most cases in the form of book piracy, such as the illicit photocopying of sections or entire books, both

²⁶ M. KEMPE, *Even in the remotest corners of the world': globalized piracy and international law, 1500–1900*, Journal of Global History, London School of Economic and Political Science, 2010, p. 355-356.

²⁷ *Ibid.* p. 356.

²⁸ <https://www.britannica.com/story/pirates-privateers-corsairs-buccaneers-whats-the-difference>

²⁹ L. AZUBUIKE, *International Law Regime Against Piracy*, Annual Survey of International and Comparative Law, Vol. 15, Issue 1, Art.4, 2009, p. 44.

³⁰ L. OWEN, *Piracy*, Learned Publishing, Vol. 14, January 21st, 2001, p. 67.

³¹ *Ibid.* p. 68.

³² *Ibid.* p. 69.

for academic or private purposes. This kind of practice has grown throughout the years and Owens states that even if statistics are not accurate, the US publishing industry was thought to have lost 664 million dollars back in 1997. Indeed, the 1990s was the decade in which the habit of photocopying books intensified³³.

Moving on to the next phenomenon, which is that of digital piracy, once again the international legal system lacks a proper definition recognised under international law, though it is commonly conceived as “*the act of reproducing, using, or distributing information products, in digital formats and/or using digital technologies, without the authorization of their legal owners.*”³⁴ Basically, digital piracy entails the infringing of intellectual property laws, although no international legal document makes precise reference to piracy in its provisions³⁵. The practice was born in the 1970s when computer hobbyists began copying and distributing copies either of games or software, out of the belief that in the digital era, knowledge and information should be free and accessible by all. Clearly, the development and advancement in computer technology and the internet, combined with the availability of personal computers, has not helped the fight against such illegal practices³⁶. Digital piracy has then evolved into new forms, such as music piracy, or the illegal downloading of musical contents, video piracy, or the illegal downloading or streaming of films and series, and lastly software piracy, or the illegal downloading of software and computer games. Why has the behaviour grown, and why are the means available not sufficient to repress such practices?

According to Ingram there is a social component, which has to be evaluated: the general public does not perceive digital piracy as a crime, but rather as an acceptable means to acquire digital contents³⁷. Interestingly enough, I had started the chapter by underlying the fact that piracy (although being referred to the maritime one) was originally perceived as a crime against humanity, while these days one of its forms is even considered acceptable. After all, either piracy of books or digital piracy are commonly considered as crimes without victims, as they “only” affect the rights of the copyright owners, thus allowing the general behaviour favouring piracy to grow³⁸. Therefore, according to many scholars, attempts should be pointed in two directions: reinforcing the legal system, which surrounds digital piracy in all its forms as well as the illegal photocopying of books, and at the same time address the belief that

³³ L. OWEN, *Piracy*, Learned Publishing, Vol. 14, January 21st, 2001, p. 68.

³⁴ P. BELLEFLAMME and M. PEITZ, *Digital Piracy*, Encyclopedia of Law and Economics, New York, Springer Science and Business Media, 2014, p. 1.

³⁵ *Ibid.*

³⁶ J. R. INGRAM, *Digital Piracy*, The Encyclopedia of Criminology and Criminal Justice, 1st Edition, John Wiley and Sons, Inc., 2014 available at <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118517383.wbecj116>

³⁷ *Ibid.* p. 1.

³⁸ P. BELLEFLAMME and M. PEITZ, *Digital Piracy*, Encyclopedia of Law and Economics, New York, Springer Science and Business Media, 2014, p. 4.

illegal downloading or reprinting is not a criminal behaviour. The lack of conviction that such practices are crimes allows them to grow and develop notwithstanding the struggle to counter it³⁹.

I will now proceed with the analysis of the concept of maritime piracy and the codification of its definition. First though, it is interesting to restate again the difference between pirates and privateers: the firsts were considered criminals and enemies of all humankind, while the latter were provided with letters of marque issued by a State, which authorized them to track and attack vessels of another nationality with whom the State issuing the letter was at war⁴⁰. It is striking to see how blurred the lines between a legal and a non-legal practice can be, when the interests of someone are at stake; and this will be a leitmotiv throughout this dissertation.

The League of Nations was the first international framework, in which the problem of piracy and the need to codify international law of the sea were raised. In 1924 the Council of the League of Nations appointed a Committee of Experts for the Progressive Codification of International Law, which was asked to discuss a number of issues, among which there was also piracy. One year later the Committee sent questionnaires to the Governments, members of the League, asking them to express themselves on those issues, and most precisely whether if they wished to draft conventions on the matters⁴¹. With regard to piracy, the governments did not respond unanimously and provided mixed answers: nine agreed but had reservations, three found the matter of no urgency, six did not provide any opinion and two did not perceive the drafting of a convention as either possible or desirable. Therefore, since the governments had very differentiated views on piracy, the Committee decided to rule out the topic from the subjects discussed and consequently, the issue was not taken into consideration at the First Codification Conference held in The Hague in 1930⁴².

The second attempt to bring attention to the problem of piracy and its codification was in 1958 in Geneva, with the Convention on the High Seas (CHS). Another three conventions were adopted in that occasion, based on the International Law Commission⁴³'s Draft: the Convention on the Territorial Sea and the Contiguous Zone, the Convention on Fishing and Conservation of the Living Resources of the High Seas and the Convention on the Continental Shelf⁴⁴.

Article 15 of the Convention on the High Seas defines piracy as:

³⁹ J. R. INGRAM, *Digital Piracy*, The Encyclopedia of Criminology and Criminal Justice, 1st Edition, John Wiley and Sons, Inc., 2014, p. 4, available at <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118517383.wbecj116>

⁴⁰ I. SHEARER, *Piracy*, Oxford Public International Law, Oxford University Press, October 2010.

⁴¹ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 99.

⁴² K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 100.

⁴³ The International Law Commission was established in 1947 by the General Assembly of the United Nations, to guarantee the progressive development of international law and its codification, as dictated by the mandate of the Assembly under article 13, paragraph 1(a), of the Charter of the United Nations. Available at: <http://legal.un.org/ilc/>

⁴⁴ *Ibid.* p. 101.

- (1) Any illegal acts of violence, detention or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (a) On the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - (b) Against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
- (2) Any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
- (3) Any act of inciting or of intentionally facilitating an act described in subparagraph 1 or subparagraph 2 of this article⁴⁵.

What should be observed about this definition is twofold: first of all, an act of piracy, to be recognised as such, must be performed for private ends; secondly, as reported by paragraph *a*) of the article, the actions must be carried out in the high seas. Interestingly enough, also facilitating or taking part in an act of piracy is recognised as committing the act itself⁴⁶.

The issues of piracy are not covered only in Art. 15, but more precisely from Article 14 to Article 21 of the Convention on the High Seas. Art. 14 stresses the importance of cooperation by States to repress piracy to the fullest possible extent. Art. 16 underlines that even in the case of a government ship or aircraft, in the event of mutiny, were they to commit acts of piracy, such actions would be considered as acts of piracy committed by a private ship. Art. 17 specifies under which circumstances a ship or aircraft are considered as pirate, while Art. 18 focuses on the retention of nationality⁴⁷. From Art. 19 to Art. 21 on the other hand, the provisions focus on the seizure of a pirate ship: as a matter of fact, any State on the high seas or outside its jurisdiction, through a military ship or aircraft may seize a pirate ship and arrest the individuals carrying out the acts of piracy. Nonetheless, was the seizure executed without adequate grounds, the seizing State shall be held accountable for any loss or damage by the State of nationality of the ship⁴⁸.

In 1982 a more encompassing regime regarding the law of the sea was created through the adoption of the United Nations Convention on the Law of the Sea (UNCLOS), which replaced the CHS entirely. Nonetheless, the CHS provisions on piracy remained almost intact from one Convention to the other⁴⁹. What is even more striking, is that the provisions of UNCLOS are considered a codification of

⁴⁵ United Nations Convention on the High Seas, Geneva, April 29th, 1958 entered into force on September 30th, 1962.

⁴⁶ *Ibid.*

⁴⁷ United Nations Convention on the High Seas, Geneva, April 29th, 1958 entered into force on September 30th, 1962.

⁴⁸ *Ibid.*

⁴⁹ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 101.

international customary law, thus are binding to every state and not only to those parties of the Convention⁵⁰.

Within UNCLOS, the provisions regarding piracy range from Art. 100 to Art. 107, where Art. 100 highlights the need for cooperation in order to repress piracy. The definition of piracy is dealt with in Art. 101, which echoes Art. 15 of the CHS, stating:

Piracy consists of any of the following acts:

(a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

(i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

(ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

(b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;

(c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b)⁵¹.

Again, the article limits the geographical area in which acts of piracy can be committed to the high sea, although it is generally agreed that provisions regarding the high sea extend to exclusive economic zone as well⁵². Nonetheless, according to Azubuike: *“For instance, if a foreign ship is attacked in the territorial waters of a State, the State, whose flag the ship is flying, is entitled, under international law, to demand that the other State, in whose territorial waters the act occurred, punish the perpetrators or otherwise redress the act”*⁵³. Therefore acts of piracy committed in the territorial sea of a State can be punished under international law, though only by the state whose territorial waters the act was committed in. Moreover, the article includes also the so-called “two ships criterion”; hence to be defined as piracy, an illegal act must be performed against another ship or aircraft⁵⁴.

Marciniak states that the provisions on piracy within UNCLOS could be grouped into 3 sets of rules: “the who”, “the what” and “the how”⁵⁵. The first set refers to the definition of piracy under Art. 101, and to the definition of pirate ship or aircraft, which is drafted in Article 103 of UNCLOS, stating that a ship or

⁵⁰ L. AZUBUIKE, *International Law Regime Against Piracy*, Annual Survey of International and Comparative Law, Vol. 15, Issue 1, Art.4, 2009, p. 49.

⁵¹ United Nations Convention on the Law of the Sea (Montego Bay Convention), Montego Bay, December 10th, 1982 entered into force on November 16th, 1994 available at http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁵² R. SATKAUSKAS, *Piracy at sea and the limits of international law*, Aegean Institute of the Law of the Sea and Maritime Law, April 23rd 2010, p. 220.

⁵³ L. AZUBUIKE, *International Law Regime Against Piracy*, Annual Survey of International and Comparative Law, Vol. 15, Issue 1, Art.4, 2009, p. 51.

⁵⁴ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 103.

⁵⁵ *Ibid.*

aircraft is considered as pirate if it is intended by the person in control to be used to commit one of the illegal acts enlisted in Art. 101⁵⁶. The second subset refers to “ the what”, namely rights and obligations of the States. To begin with, as it was previously mentioned, Article 100 stresses the importance of cooperation to eradicate piracy, while Articles 105 and 106 address seizure by warships or military aircrafts and liability for seizure without adequate grounds. The last set of rules, “the how”, remarks that seizure must be conducted by warships or military aircrafts, or by any ship or aircraft easily identifiable to be on government service or authorized by one⁵⁷.

After having analysed the provisions related to piracy, I would like to focus on the features of its definition, and more precisely on the critics towards its narrowness. For instance, the IDI, Institut de droit international, in its Naples Declaration of 2009, commented on the faults of the definition of piracy highlighting the fact that it was restricted only to acts perpetrated for private ends in the high seas, and against one ship or aircraft to another⁵⁸. Therefore, illegal acts carried out in the territorial sea or not involving two ships are not included in the provisions, leaving thus aside other illicit acts, which affect the safety of navigation as well⁵⁹. The provisions regarding piracy grant only universal jurisdiction of the seizure of pirate ships, in order to repress piracy. According to Satkauskas, the customary nature of the universal jurisdiction conferred to the right to seize, leaves an interesting margin to improve and broaden the current definition of piracy under UNCLOS⁶⁰.

Another author who shares this view is Tullio Treves, as he states that the UNCLOS definition addresses only violence and depredation in the high seas and following the two ships criterion, not considering the territorial sea, for instance⁶¹. As reported by Treves, the United Nations Security Council, through resolution 1816 of 2008, tried to cope with the narrowness of the definition, and precisely with the feature referring to the high sea⁶². As a matter of fact, paragraph 7 of the resolution allows those States engaged in the fight against piracy off the coasts of Somalia and supporting its transitional federal government, to enter the territorial waters of the country for a limited period of six months, always in accordance with international law⁶³.

Before the UNSC Resolution of 2008, there was another attempt to overcome the limits of the UNCLOS definition, through the provisions of the SUA Convention of 1988, namely the Convention for the

⁵⁶ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 104.

⁵⁷ *Ibid.* p. 105.

⁵⁸ Institut de droit international, *Naples Declaration*, Naples, September 10th, 2009 available at http://www.idi-iiil.org/app/uploads/2017/06/2009_Naples_FR.pdf

⁵⁹ R. SATKAUSKAS, *Piracy at sea and the limits of international law*, Aegean Institute of the Law of the Sea and Maritime Law, April 23rd 2010, p. 231.

⁶⁰ *Ibid.* p. 234.

⁶¹ T. TREVES, *Piracy and the International Law of the Sea*, January 23rd, 2013, p. 124.

⁶² *Ibid.* p. 125.

⁶³ United Nations Security Council Resolution, S/RES/1816 (2008), June 2nd, 2008, available at http://oceansbeyondpiracy.org/sites/default/files/attachments/2_0.pdf

Suppression of Unlawful Acts against the Safety of Maritime Navigation, drafted by the International Maritime Organization⁶⁴, negotiated after the Achille Lauro incident⁶⁵. As the title of the Convention suggests, its scope is to repress unlawful acts, therefore addressing the violence that has affected international maritime navigation, which has intensified in the last decades of the 20th century. Although the SUA Convention does not refer precisely to piracy, under Art. 3 it covers a number of illegal acts, which resemble some of the features of an act of piracy, such as: seizing or exercising control over a ship by force or threat, performing acts of violence or destroying a ship⁶⁶. Its provisions are not limited by the two ships criterion, or by the one stating that criminal acts must be committed for private ends, therefore broadening the definition provided by UNCLOS. Moreover, the SUA Convention applies as long as the criminal acts are not perpetrated in the territorial sea of the State, widening once again the indications of UNCLOS. Hence, the jurisdictional scope of the SUA Convention is broader than UNCLOS; although the only limit that the former has, comparing to the latter, is that it is not recognised as customary international law, therefore applies only to the parties to the Convention⁶⁷.

Lastly, it is interesting also to linger onto the difference between maritime piracy and maritime terrorism. As it was already mentioned, the concept of piracy has developed throughout the centuries, and recently has also evolved into new forms, such as digital piracy. Nevertheless, the Achille Lauro incident provides another perspective related to piracy, which is that of terrorism. According to Shearer, the attack to the Italian cruise cannot be considered an act of piracy, as it does not apply to the criteria of “private ends”, as prescribed by Art. 101 of UNCLOS. Still, it prompted the creation of new rules of international law, as it was demonstrated by the drafting of the SUA Convention⁶⁸.

Dubner, who shares the same views, distinguishes between “classical piracy” and “modern-day piracy”⁶⁹. The former refers to murder, plunder, robbery and kidnapping at the international level, which have been recognised as a crime against humankind, that has been codified into treaties both with CHS and

⁶⁴ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 105.

⁶⁵ W. E. SMITH, *Terrorism: The Voyage of the Achille Lauro*, TIME, October 21st, 1985 available at <http://content.time.com/time/subscriber/article/0,33009,960163,00.html>: The Achille Lauro was an Italian cruise liner which hosted 750 passengers. The ship was hijacked in 1985 by four Palestinian men, from the group Palestine Liberation Front, who had planned a terrorist attack to carry out once they would have reached the city of Ashdod. Their aim was to ask for the liberation of 50 Palestinian prisoners held captive in Israel. Nonetheless, since they had been discovered carrying weapons on board, they decided to act ahead of time, and hijacked the cruise and held the passengers hostage. Were their requests not met, they would have killed hostages and one man, Mr. Leon Klinghoffer, was their first, and fortunately, only victim. The surrender of the four hijackers was negotiated by the head of the Palestinian Liberation Front, Abul Abbas, who was able to lead them to surrender and to hand themselves over to the authorities of the Suez Canal.

⁶⁶ International Maritime Organisation, *Convention for the Suppression of Unlawful Acts of Violence against the Safety of Maritime Navigation*, Rome, March 10th, 1988 entered into force on March 1st, 1992, available at http://oceansbeyondpiracy.org/sites/default/files/SUA_Convention_and_Protocol.pdf

⁶⁷ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 108.

⁶⁸ I. SHEARER, *Piracy*, Oxford Public International Law, Oxford University Press, October 2010.

⁶⁹ B. HART DUBNER, *Piracy in Contemporary National and International Law*, California Western International Law Journal, Vol. 21, N. 1, Art. 8, 1990, p. 139.

UNCLOS. “Modern-day piracy” on the other hand, is a crime which is commonly associated with “piracy”, but which actually refers to hijacking both of ships and aircrafts, so basically to present-day terrorism, which is a relatively new phenomenon⁷⁰. Therefore, it is important to understand whether if the two concepts are mutually exclusive or perhaps entangled in some way. According to Dubner, there is no custom regarding the “modern-day” definition of piracy, as it lacks the criteria necessary to customs, precisely the *opinio iuris sive necessitates*, or the conviction that a practice must be turned into law, and a constant and uniform practice over time⁷¹.

Unfortunately, there is no agreed upon definition of maritime terrorism, as much as there is a lack of a comprehensive agreed upon definition of terrorism. The United Nations have put several efforts in trying to fight specific forms of terrorism, by adopting 13 conventions, the most recent being the International Convention for the Suppression of Acts of Nuclear Terrorism of 2005, although failing to settle on an inclusive definition⁷². Nonetheless, there is a common practice to recognise maritime terrorism as consisting of: attempts or threats to seize a ship by force, damaging or destroying a ship or its cargo, injuring or killing passengers on board, or more broadly, endangering the safety of navigation in any way. The IMB though, for statistical purposes, does not differentiate between piracy or maritime terrorism, thus proving that there is a fine line between the two concepts⁷³.

The main difference, which has been highlighted so far, regards the criteria of private ends: as it was already mentioned, the UNCLOS definition dictates that an act, to be recognised as piracy, must be committed for private ends⁷⁴. As Marciniak states, it is generally recognised that “private ends” do not entail political motives, thus, the two notions differ conceptually: the main difference between the two illegal acts is the intent with which the actions are perpetrated⁷⁵. When it comes to similarities, they both endanger the right of freedom of navigation on the one hand, and on the other they are both considered as burdens, which States do not have to deal with alone, but that have to be addressed by the international community as a whole, since they are both recognised as acts committed against humankind⁷⁶.

To conclude, since the character of terrorism is that of being “chameleon-like” as was suggested by Antonio Cassese, because according to the circumstances under which the act is perpetrated, it may fall

⁷⁰ B. HART DUBNER, *Piracy in Contemporary National and International Law*, California Western International Law Journal, Vol. 21, N. 1, Art. 8, 1990, p. 140.

⁷¹ *Ibid.* p. 142-143.

⁷² J. RUPEREZ, Counter-Terrorism Committee Executive Directorate, *The United Nations in the Fight against Terrorism*, 2006, p.3, available at https://www.un.org/sc/ctc/wp-content/uploads/2017/01/2006_01_26_cted_lecture.pdf

⁷³ L. JOUBERT, *The Extent of Maritime Terrorism and Piracy: a Comparative Analysis*, South African Journal of Military Studies, Vol. 41, N. 1, 2013, p. 113.

⁷⁴ United Nations Convention on the Law of the Sea (Montego Bay Convention), Montego Bay, December 10th, 1982 entered into force on November 16th, 1994 available at http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁷⁵ K. MARCINIAK, *International Law on Piracy and some Current Challenges related to its Definition*, Polish Review of International and European Law, Vol. 1, Issue 3-4, 2012, p. 124.

⁷⁶ *Ibid.* p. 129.

under various categories of crimes of international criminal law⁷⁷; it is quite evident that the two concepts of piracy and maritime terrorism present some similarities, though they are different in purpose. Nonetheless, they do not have to be confused or combined.

Before engaging in the complex analysis of what biopiracy is and its related concepts, which will be dealt with in the next chapter, I would like to focus the attention on a very important issue. It is quite clear so far, that the definition of piracy is not universal and that the concept itself entails several other notions: digital piracy, book piracy or maritime piracy and so forth, which have developed through the course of history. It is also worth noticing, that by being so broad, such concept has received differentiated approaches, starting from being considered a threat to humankind if referred to maritime piracy in the past, or an acceptable and shared practice among the general public when referring to digital piracy. Moreover, the former has been addressed in the international arena in several occasions, and has been codified in more than one convention, while the latter does not present an international legal definition yet. Therefore, narrative, which refers to how events are narrated, in the context of this dissertation and in approaching biopiracy, plays a fundamental as well as influential role, as I will try to prove in the next chapters.

⁷⁷ A. CASSESE, *International Criminal Law*, 1st edition, Oxford, Oxford University Press, 2003, p. 125.

2. From piracy to biopiracy

The features of piracy have been extensively explained in the previous chapter, by referring to the international legal documents available and by analysing their accomplishments and limits. In the following chapter I will try to provide a comprehensive definition of both bioprospecting and biopiracy, two faces of the same coin. As I will try to demonstrate, both phenomena are extremely complex and involve many different features, though first it might be important to establish their connection with the concept of piracy.

Piracy has been commonly referred to as an act of robbery or as a misappropriation, and these two elements are those that comply the most with the practices of bioprospecting and biopiracy. Nonetheless, biopiracy cannot be fully understood if all of the different but appropriate connections are made, between its developments, cultural biases, juridical and institutional inadequacies, as well as commercial interests. The modern processes of bioprospecting and biopiracy are extremely sophisticated, thus distancing themselves very much from the rough and violent acts of depredation of sea pirates and corsairs⁷⁸. Therefore, the connection is subtle but surely present and the following chapters will clearly demonstrate how and why.

Firstly, the practice of bioprospecting will be introduced, by focusing on its main features and its clear relation with biopiracy. Bioprospecting, or the exploration of biological material, has become quite a usual procedure only in the latter part of the 20th century, after the right of patenting living materials was granted⁷⁹. From the very beginning, the system has been criticised by many advocates, since what was born as a mere scientific research process, became entangled with commercial interests. Indigenous people, willingly or unwillingly involved in the practice, are often exploited and deprived either of their resources or of their own knowledge, and usually even both.

The features described above are almost the same that characterize biopiracy. Unfortunately, there is no legally recognised definition (neither for bioprospecting) regulating this form of misappropriation, but only several definitions provided by scholars, who try to outline the practice, focusing on the various aspects involved. Chapter 1.2.2 will begin with the many definitions proposed by experts, and explain a little history of the process and how it developed, thus following with its strict connection with colonialism. I will then proceed by highlighting its main features and secondly, arguments in favour and against, although it will be demonstrated that the division between the two sides is not so cut clear.

⁷⁸ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 121.

⁷⁹ T. EFFERTH, *Biopiracy of natural products and good bioprospecting practice*, Elsevier, *Phytomedicine* 23, 2016, p. 169.

2.1 Bioprospecting

In order to properly understand what biopiracy is, it is fundamental to have a through idea of the issue of bioprospecting. As a matter of fact, as it will be explained in the following chapter, the two concepts are strictly connected, as much as they are related with other notions, such as biological or genetic resources and indigenous knowledge.

The search for biological resources is not a recent phenomenon, although the intensification of research and in some cases, exploitation, has intensified only recently thanks to globalisation and to the development of biotechnology industry. The patentability of natural resources on the other hand, which is a feature of bioprospecting, as well as of biopiracy, is a rather new phenomenon, since until 1980 living organisms were considered as elements of nature and therefore not patentable. In 1980 nonetheless, the right to patent living materials was granted in the United States by the American Supreme Court, in the landmark case *Diamond vs. Chakrabarty*, through the patenting of a bacterium transferred via DNA⁸⁰.

Alongside the development of biotechnology, bioprospecting, which was first defined by Reid as “*the exploration of biological material for commercially valuable genetic and biochemical properties*”, has evolved⁸¹. Of course, this is not a legally recognised definition, but rather one, which was proposed by those favouring the exploitation of biological resources, or, by those who only consider one side of the story. For instance, Vandana Shiva, one of the most renowned activists and biopiracy experts, has often criticised such a simplistic view of the process of bioprospecting, by stating that it only looks at the facts from a rather narrow perspective, thus not acknowledging the many other issues involved.

According to the Indian activist, bioprospecting is an inappropriate term, obtained by adding the prefix “bio” to the already existing notion of prospecting, which referred to the search for precious metals and oil in the soil⁸², and did not take into consideration nor the living forms, neither the renewable dimension of biological resources⁸³. As it was already stated, the concept entails many other notions, including that of indigenous knowledge and indigenous people. For Shiva, if bioprospecting is looked at from the point of view of indigenous people, it is no exploration, rather exploitation of their indigenous and collective knowledge⁸⁴. Shiva postulates that the concept of bioprospecting is legally flawed: both bioprospecting and biopiracy are entangled with patents, and more precisely, with the patenting of traditional knowledge

⁸⁰ T. EFFERTH, *Biopiracy of natural products and good bioprospecting practice*, Elsevier, Phytomedicine 23, 2016, p. 169: *Diamond vs. Chakrabarty* refers to the landmark case in which the American Supreme Court granted a patent on a bacterium transfected with DNA, which allowed it to degrade hydrocarbons in order to cleanse oil spills in the seas. The Court held as main arguments firstly the fact that living microorganisms made by humans were in fact patentable subject matter, and secondly, that since DNA sequences are not obvious they can be deemed patentable. Therefore, the patent requested by Chakrabarty was allowed. Further information can be found at: <https://supreme.justia.com/cases/federal/us/447/303/>

⁸¹ A. L. HARVEY and N. GERICKE, *Bioprospecting: Creating a Value for Biodiversity*, ResearchGate, October 2011, p. 323, available at <https://www.researchgate.net/publication/221918042>

⁸² N. MATEO, W. NADER, and G. TAMAYO, *Bioprospecting*, Encyclopedia of Biodiversity, Vol. 1, Academic Press, 2001, p. 480.

⁸³ V. SHIVA, *Bioprospecting as sophisticated biopiracy*, p. 15, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁸⁴ *Ibid.* p. 16.

(TK). As it will be explained, one of the requirements of patents is novelty; therefore, it seems quite clear that patenting traditional (already existing) knowledge cannot fulfil such requirement⁸⁵.

The process of bioprospecting has become highly technical and systematized in the 21st century and today it consists of three distinct steps: protection of biodiversity, collection, research and development of biological samples. Of course, the first two steps are connected, as a respectful and controlled collection of samples allows for the protection of biodiversity itself, avoiding the so-called problem of “sample hunting”⁸⁶. Collection involves also screening, meaning preliminary examinations on a specific bioproduct, to determine whether it will be usable, or if it may require further analysis. After screening, bioprospectors, which are usually researchers from universities, or from private entities (seldom even from NGOs), can move on to the last phase which entails research and development. In this phase the bioproduct is determined as valuable or potentially useful genetic resource, or not. Of course, the last step almost never occurs in the country of origin of the bioresource, but in the one from which the private entity financing the research comes from, very often from the North of the world⁸⁷.

According to Shiva, and as can be read between the lines of the fact that many of the private entities financing bioprospecting researches come from the North and move to the South, the consequences of such processes are extremely unfavourable for indigenous communities and developing countries. She asserts that some of the solutions proposed to render the process fairer, are just a façade covering for unlawfulness. For instance, contracts can be issued between a company and the indigenous community, although they often lack prior informed consent comprehensive enough for all the individuals involved to meet their needs⁸⁸. As a consequence, bioprospecting practices tend to create impoverishment within the communities providing the knowledge, as companies try to issue patents and monopolies for resources which do not belong to them, thus stealing them from their true owners.

Indeed, Shiva proposes an interesting example of biopiracy activity even if an agreement was in place, proving that in most occasions benefit sharing agreements lean towards transnational corporations instead of favouring the indigenous communities providing the knowledge⁸⁹. In the case of “Arogya Pacha” or “Jeevan”, the Indian Kani tribe had been using the plant for decades, but a US pharmaceutical company later turned it into a drug, after a contract had been issued between the Tropical Botanical Garden Research Institute of Trivandrum and the US based company. Nowadays, Nutri Science Innovations, always US based, is selling the drug thorough the Internet, and its estimated market value is of one million dollars, while the Kani have only received \$12.000. Clearly, contracts are hardly favourable or

⁸⁵ V. SHIVA, *Bioprospecting as sophisticated biopiracy*, p. 15, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁸⁶ T. J. KIM, *Expanding the Arsenal against Biopiracy: Application of the Concession Agreement Framework to Prevent Misappropriation of Biodiversity*, *Science and Technology Law Review*, Vol. 14, p. 76-77.

⁸⁷ *Ibid.* p. 78.

⁸⁸ V. SHIVA, *Bioprospecting as sophisticated biopiracy*, p. 17-18, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁸⁹ *Ibid.* p. 21.

fair for the indigenous communities⁹⁰. Moreover, their impoverishment depends also from overexploitation: abusing and capitalizing GR of a community whose livelihood, even if not entirely, depends on that, allows no space for development and independence. Furthermore, the rightful share of indigenous is never respected, and what they gain back is far from being rightful or fair⁹¹.

Lastly, another matter related to bioprospecting, and even more to biopiracy, which is the issuing of patents, is said to reduce indigenous knowledge to mere commodity, thus taking away the great value that such knowledge has for the livelihood of indigenous people. The biological diversity and the knowledge related to it constitute the intangible heritage that is so vital for the livelihood of indigenous communities. As a matter of fact, more than one community could benefit from the same biological resources, which in exchange are protected and conserved⁹². Conserving and protecting biodiversity, but also considering its value, means also safeguarding the knowledge related to it, as they are strictly connected. It is striking to witness how easily transnational corporations tend to view biodiversity and knowledge as mere raw materials instead, which can be traded into commodities and therefore have only an economic and commercial value, but not a cultural one⁹³. Moreover, for those corporations, culture and knowledge can and should be easily privatized, but not for the advantage of those who actually own it.

As will later be demonstrated, the above mentioned are all features that mark also the practice of biopiracy, consequently strengthening Shiva's argument, namely that bioprospecting is nothing more than a sophisticated form of biopiracy. It is very important to remember, that both practices have to be dealt with by taking into consideration three main contexts: the donor community, the possible recipients and the bioprospecting corporation. These will be recurrent also when approaching biopiracy⁹⁴.

Before proceeding to a through description of this issue nonetheless, which will be dealt with in the next chapter, it is necessary, in order not to fall into the traps of narrative, hence providing just one side of the story, to try and present some arguments in favour of bioprospecting. Nevertheless, it is important to underline that those who are "in favour" acknowledge the fact that in many cases, bioprospecting can easily fall into biopiracy. How so?

First of, many recognise that the lack of value attributed to traditional knowledge is a very common reason for biopiracy. Unfortunately, indigenous knowledge is very seldom documented and this allows the impasse of the aforementioned novelty criteria for patent applications to be easily overcome, hence falling into biopiracy⁹⁵. Those who do not condemn bioprospecting entirely nonetheless, recognise that

⁹⁰ V. SHIVA, *Bioprospecting as sophisticated biopiracy*, p. 34, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁹¹ *Ibid.*

⁹² *Ibid.* p. 18.

⁹³ *Ibid.* p. 22.

⁹⁴ *Ibid.* p. 27.

⁹⁵ T. EFFERTH, *Biopiracy of natural products and good bioprospecting practice*, Elsevier, *Phytomedicine* 23, 2016, p. 172.

the commercialization of indigenous knowledge as well as of genetic resources is another excuse for biopiracy. Hence, mere scientific research without lucrative gains should not be condemned and could be a good solution to avoid the risk of bioprospecting turning into biopiracy, as well as a comprehensive and detailed legal system could be an effective solution⁹⁶. Considering bioprospecting from a sheer scientific point of view surely shows no harm or disadvantages, as bioprospecting in this case is presented as a scientific research paradigm, in which bioprospectors (or scientists) explore locations to find new genetic resources to be examined and turned into a drug or natural remedy⁹⁷. Clearly, this perspective is far too simplistic as it fails to take into consideration: who is paying for the research, who will benefit from the selling of the drug and who is on the other hand harmed during the process.

To conclude, it is quite clear that bioprospecting is indeed a sophisticated form of biopiracy, in the way that it masks the risks and traps for indigenous people in the form of scientific research and benefit sharing agreements. Notwithstanding this, the concept is undoubtedly flawed and already provides some insights on the faults of biopiracy itself. The practice of bioprospecting has also demonstrated, how entangled many issues are on so many levels: indigenous people and their knowledge, genetic resources, private entities and the (lacking) legal system. All these elements are fundamental ingredients to bear in mind in order to develop and understand extensively what biopiracy is and how it can be challenged.

⁹⁶ T. EFFERTH, *Biopiracy of natural products and good bioprospecting practice*, Elsevier, *Phytomedicine* 23, 2016, p. 172.

⁹⁷ *Ibid.*

2.2 Moving to biopiracy

In the previous chapter I tried to outline the practice of bioprospecting, essential to the understanding of biopiracy. By now, it should be clear what piracy is and its main features, as well as those of bioprospecting. But how do they connect with biopiracy? We know that the term *piracy* is very broad and entails different types of illegal acts, from depredation on the high seas, to the misappropriation of copyrighted works. The concept of biopiracy is somewhere between the two opposites of maritime and digital piracy, as it is a form misappropriation. However, there is no legally recognised definition even though the practice is quite known worldwide. As a form of misappropriation, and more precisely, the unauthorized extraction of biological resources and stealing of traditional knowledge either for commercial or research aims, at the disadvantage of local communities, the only definition which is more likely to be useful on a legal level and that resembles some features of biopiracy, is the one provided by the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC)⁹⁸. The Committee, which operates under WIPO's mandate, has worked to prepare the Draft Policy Objectives and Core Principles for the Protection of Traditional Knowledge, which focuses also on the misappropriation of traditional knowledge (TK), stating that:

“Any acquisition or appropriation of traditional knowledge by unfair or illicit means constitutes an act of misappropriation. Misappropriation may also include deriving commercial benefit from the acquisition or appropriation of traditional knowledge when the person using that knowledge knows, or is grossly negligent in failing to know, that it was acquired or appropriated by unfair means; and other commercial activities contrary to honest practices that gain inequitable benefit from traditional knowledge⁹⁹”.

Clearly though, this definition only takes into account misappropriations related to traditional knowledge, thus avoiding to mention, other than the term itself, two other important features of biopiracy: genetic resources (GR) and patents. Therefore, such a definition is not comprehensive enough to properly define the issue of biopiracy.

The first time that the term biopiracy was used, was in 1993 in a Communiqué by the activist group RAFI, Rural Advancement Foundation International¹⁰⁰, now called ETC Group (Erosion, Technology and

⁹⁸ P. DRAHOS and S. FRANKEL, *Indigenous People's Innovations*, Canberra, Australian National University E Press, 2016, p. 79.

⁹⁹ World Intellectual Property Organization, Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC), *Draft Policy Objectives and Core Principles for the Protection of Traditional Knowledge*, WIPO/GRTKF/IC/7/5 (2004).

¹⁰⁰ C. HAMILTON, *Intellectual property rights, the bioeconomy and the challenge of biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 1.

Concentration Group). The author was Pat Mooney, biodiversity expert and co-founder of RAFI¹⁰¹. The document stated that biopiracy is: “*the appropriation of the knowledge and genetic resources of farming and indigenous communities by individuals or institutions who seek exclusive monopoly control (patents or intellectual property) over these resources and knowledge*”¹⁰². Therefore, the distinct features of biopiracy are: appropriation, or misappropriation as it will be later demonstrated, of knowledge and genetic resources and an unauthorized commercial use meaning a lack of sharing of gains, both monetary and non-monetary, with the indigenous communities owing the traditional knowledge, and lastly, patents¹⁰³.

Biopiracy may be thought as a recent phenomenon, but actually, the misappropriation of plants has an older origin, which can be traced back to Christopher Columbus. When the Italian explorer reached the Americas, he collected some plant germplasm and brought them back to Europe, and so exotic plant species became common in Europe as well as the practice of collecting plant resources¹⁰⁴. The intention of Columbus was to study those plants and when he returned to the Americas he brought back European plants, hoping that they could support a future possible colony. Shortly after, with the spreading of colonies, it became quite typical of the motherland to transfer germplasm from the colony, and not the other way around of course¹⁰⁵. From the very beginning the misappropriation of genetic resources was marked by a clear pattern: an asymmetrical transfer from the South to the North. The plants were not only transferred to be used as food, but also exotic and beautiful flowers were transported to become main attractions in public gardens or to please the eyes of a few wealthy families, although most plants were brought back for economical revenue¹⁰⁶. Truthfully therefore, the history does not lack episodes of misappropriation even before the term biopiracy was drafted or even conceptualized. Some authors consider this as a proof of the fact that the practice of misappropriation of GR, or of committing biopiracy was born from, or is just another form of colonialism.

The already mentioned Indian activist and expert Vandana Shiva was the first one to identify a similar pattern in the practices of colonialism and of biodiversity conservation. According to the author the same impulse and lust for owning and conquering which brought the Western powers to colonize America and Africa, is the same one that is driving the interest for GR. The same lack of regard for cultures and traditions of other communities is recognizable in the modern day practice of biopiracy¹⁰⁷. The colonies today nonetheless, are no longer countries themselves, but the “genetic-codes” of plants and other living forms. Therefore biocolonialism, is a concept not very much distant from the one of biopiracy, describing a

¹⁰¹ ETC Group website: <http://www.etcgroup.org/issues/patents-biopiracy>

¹⁰² C. HAMILTON, *Intellectual property rights, the bioeconomy and the challenge of biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 2.

¹⁰³ T. EFFERTH, *Biopiracy of natural products and good bioprospecting practice*, Elsevier, Phytomedicine 23, 2016, p. 167.

¹⁰⁴ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 96-97.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Ibid.*

¹⁰⁷ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 38.

precise pattern: an industrialized country corporation searches for the application of a particular plant already known in Third World countries, and more precisely held by indigenous or local communities. The corporation then patents the product without assuring prior informed consent, a benefit sharing agreement or a bilateral contract and then avoids sharing the revenues of the selling of the GR in the usual form of a beauty product, drug or medicine with the indigenous community. That, in short, is the summary of the practice of biopiracy and also of biocolonialism¹⁰⁸.

Although not an unprecedented phenomenon, biopiracy has only gained some recognition in the international arena during the 1990s, when activists and Third World countries began to speak about the injustices related to the misappropriation of genetic resources and traditional knowledge. At the end of that decade, the work of Vandana Shiva started to attract a wide audience. Shiva wrote several books and articles dedicated to biopiracy, and she provides the following definition of the phenomenon: “*it refers to the use of intellectual property systems to legitimize the exclusive ownership and control over biological resources and biological products that have been used over centuries in non-industrialized cultures*”¹⁰⁹. By adopting this definition, Shiva highlights another crucial element of the biopiracy equation: the intellectual property right system, which is deemed inadequate for the protection of traditional knowledge. The lack of legislation covering the several issue related to biopiracy, will be the core of Chapter 3 of this dissertation.

The lack of adequate legislation is directly responsible also for a flawed legal definition recognised by scholars and experts, who have all given their contributions to addressing the issue, by focusing more on one feature than the other: for instance, the Edmonds Institute¹¹⁰, a NGO which is engaged in preserving biodiversity and the environment, defined biopiracy as: “*where there is access to or acquisition of biodiversity (and/or related traditional knowledge) without prior informed consent, including prior informed consent about benefit sharing, on the part(s) of those whose biodiversity (or traditional knowledge) has been ‘accessed’ or ‘acquired’, there is biopiracy – i.e., theft.*”¹¹¹, thus focusing on the thievery of biological resources. While for example Graham Dutfield, who is more interested in the intellectual property right system and in the behaviour of transnational corporations, addressed it as the “*ways that corporations from the developed world claim ownership of, free ride on, or otherwise take unfair advantage of, the genetic resources and traditional knowledge and technologies of developing*

¹⁰⁸ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 7.

¹⁰⁹ C. HAMILTON, *Intellectual property rights, the bioeconomy and the challenge of biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 2,

¹¹⁰ Edmonds Institute Website: <https://www.edmonds-institute.org/>

¹¹¹ C. HAMILTON, *Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property*, Developing World Bioethics, Vol. 6, Blackwell Publishing Ltd, November 3rd, 2006, p. 159.

countries”¹¹². Each definition is as true as the other one, and there is no definition more precise or more correct than the others: they only tend to centre the attention on a different feature of biopiracy.

Starting from the definition provided by Dutfield, Kim provides an interesting differentiation of interpretations, asserting that biopiracy can be categorized into two broad types of definitions: a critical and a legalistic one. The critical definition proposed by Dutfield highlights the tight connection between the practices of bioprospecting and biopiracy, while omitting to underline how developed countries take advantage of developing ones¹¹³. On the other hand, the legalistic definition supports the critical one, by focusing on the faults of the intellectual property regime that allow for biopiracy to happen. An example of a legalistic definition is the one provided by Shiva, although unfortunately, legalistic does not entail legal¹¹⁴.

Now that a brief history and several definitions of biopiracy have been provided, I would like to focus the attention on its features as a complex phenomenon, which have been identified by more than one scholar. Ikechi Mgbeoji for instance, referred to biopiracy as a multi-faced phenomenon: a cultural, institutional, juridical and epistemological reality. As a matter of fact, the cultural dimension has been already highlighted by referring both to biocolonialism, or the Western power’s lust for GR of Southern countries, and to indigenous knowledge¹¹⁵. In this case cultural dimension is twofold: on the one side, there lies the profound and ancient value that indigenous communities accord to their knowledge and traditions, which shape their identity as a community and individuals, on the other hand there is a complete lack of respect for such values, again carried out by Western countries or corporations. Therefore, biopiracy is also a cultural problem, where the absence of recognition of value to other traditions and culture is the core issue¹¹⁶.

Subsequently, Mgbeoji identifies two other dimensions, which help identifying the features of biopiracy: the institutional and the juridical levels. According to the author, these two aspects are entangled as the biases of the patent law regime and the inadequacies of the international institutions in charge of plant use and traditional knowledge appropriation follow parallel patterns. As it will be successively explained, the international patent system and its institutions do not grant enough protection to GR as well as to TK, thus allowing and not restricting biopiracy¹¹⁷.

Lastly, by considering biopiracy only as an epistemological phenomenon, the efforts and contribution of local communities are completely erased. Indeed, the improvements of seeds and plants meticulously cultivated and controlled by local farmers are not considered, as they lack scientific basis. Therefore, the

¹¹² T. J. KIM, *Expanding the Arsenal against Biopiracy: Application of the Concession Agreement Framework to Prevent Misappropriation of Biodiversity*, Science and Technology Law Review, Vol. 14, p. 79.

¹¹³ T. J. KIM, *Expanding the Arsenal against Biopiracy: Application of the Concession Agreement Framework to Prevent Misappropriation of Biodiversity*, Science and Technology Law Review, Vol. 14, p. 79.

¹¹⁴ *Ibid.*

¹¹⁵ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 121.

¹¹⁶ *Ibid.*

¹¹⁷ *Ibid.*

seeds are regarded by many as cultural heritage of mankind (CHM) or, once they are imported to the North, they are seen as “improved varieties”, having scientific basis and therefore patentable¹¹⁸. According to Robinson: “*Traditional knowledge, which is typically inextricably linked to language, folklore, culture, place and identity, needs to be valued as a different but no less important knowledge system than scientific systems for understanding the world.*”¹¹⁹”, thus reinforcing Mgbeoji’s arguments.

Robison divides biopiracy into two broad categories: patent-related biopiracy cases and non patent-related ones. The former are the most common cases of biopiracy, as it is usually related to the granting of patents, while the latter refers to incidents which should be given much more attention, as they are not always considered as actual biopiracy cases. Patent-related cases of course are intrinsically connected to patents and the criterion to obtain one, as regulated by Article 27 of the TRIPS Agreement¹²⁰. These cases entail the patenting of “inventions” (which shall be put in inverted commas, as it is often criticised as they are not considered as actual inventions fulfilling the novelty criterion), based either on biological resources or TK, extracted without adequate benefit sharing agreement or consent¹²¹.

The non patent-related episodes, do not follow the patent criterion as suggested by the name, but they do generate inequities and injustices which deserve attention. As a matter of fact, plant-variety protection laws usually grant some form of monopoly, thus excluding usually local beneficiaries from the utilization of their own resources. Trademarks are also considered non patent episodes, as in some cases traditional communities have found their own names or names related to their traditions or culture, misused for commercial purposes, and of course no revenue was shared with them¹²². Once again, the trademarks example proves that the value attributed to other cultures and to elements related to it, is extremely little if none.

At this point, it should be clear which are the fundamental features of biopiracy: misappropriation, genetic resources, traditional knowledge. It should be also quite evident, who are the main actors involved: indigenous communities, transnational corporations and/or research institutes. Biopiracy’s faults have also been quite explicit from the beginning, since as soon as the first cases made their appearance with the general public, the critics towards the phenomenon were almost automatic. Therefore, if the faults were so obvious, how did it develop and thrive in the last two decades?

First of all, as it was already mentioned, the lack of the international legal system and of international institutions to cope with the issue were not reinforcing, but surely not even dissuading the practice. Secondly, unfortunately, the whole set of biopiracy relies heavily on both the hospitality and the naiveté of

¹¹⁸ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 121.

¹¹⁹ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 45.

¹²⁰ *Ibid.*

¹²¹ P. DRAHOS and S. FRANKEL, *Indigenous People’s Innovations*, Canberra, Australian National University E Press, 2016, p. 80.

¹²² D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 45.

the indigenous communities¹²³. Mgbeoji provides the interesting example involving a chief of the Secoya community in Ecuador and a man, which will later turn out to be an employee of the International Plant Medicine Corporation. In the episode, the chief exchanged some specimen of the rare plant *Banisteriopsis caapi* for two packs of Marlboro cigarettes, offered by the Western man, whose name was Loren Miller¹²⁴. Miller had discovered that the plant had interesting hallucinogenic properties, so he took the seeds, brought them back to the United States, started to breed them and filed for a patent, which he was granted. Unfortunately, the US have lower requirements to the “novelty” criteria in granting patents, therefore it happens far more easily that the US Patent Office accords a patent which would have been rejected in other countries. Moreover, the lack of knowledge that local communities have of their own rights has in many occasions allowed for biopiracy cases to happen. Some argue that the patenting of plant varieties itself has been a fundamental precondition for the thriving of biopiracy¹²⁵.

Once that the features and the conditions that have enabled biopiracy to thrive have been sorted out, it is essential to dwell upon the argumentations of those who are against the practice, and those who, do not favour it entirely, but they do not believe it is as harmful and illicit as it is depicted. Therefore, the usual distinction of who is in favour and who is against is not so cut clear in the case of biopiracy. As a matter of fact, Maggie Kohls, described several kinds of opponents of the biopiracy practices, which all refer to a different feature.

The first kind of opponents, the so-called “indigenous bio-opponents”, advocate in favour of indigenous people, who do not experience benefit sharing, therefore they do not object the patenting itself but they want to assure that traditional knowledge holders benefit some shares from the patenting of their TK. Thus, indigenous people should be entitled to either revenues or shares of any profits earned by the multinational corporations involved. They deserve equitable benefit sharing¹²⁶.

The second type of opponents, “the germplasm bio-opponents”, objects the removing of native plants from their original country of origin and then bringing them to Western countries. Therefore the main opposition concerns foreigners patenting native plants. This kind of attitude is mostly based on the idea that resources in developing countries are the whole world’s, and do not belong to the tribes who actually own them¹²⁷. Some of the most famous biopiracy examples fall into this category, as for instance the Basmati Rice case.

The third type of opponents, defined as “romantic bio-opponents”, believe that both GR and TK should stay where they belong, and therefore argue against the practice of expropriating indigenous people of their own knowledge and resources. They object the commercialization of these elements and are strongly

¹²³ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 133.

¹²⁴ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 133.

¹²⁵ *Ibid.* p. 133-134.

¹²⁶ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 111.

¹²⁷ *Ibid.* p. 112.

against patenting¹²⁸.

Lastly, “no-patents bio-opponents” harshly disagree with the misappropriation of traditional knowledge. The patenting of TK according to them shows a lack of respect towards indigenous communities and to their culture and traditions that has to be criticised. The fourth group therefore disagrees with patenting and is not interested in benefit sharing or the transferring of biological material from the native country to another one. Patenting TK shows a lack of respect for ancient wisdom and knowledge. The Neem Tree case will prove such assertions and is a typical case of misappropriation of TK¹²⁹.

I would like to dwell upon the last group of opponents, as their issue is strictly connected to the topic of the following chapter, namely indigenous communities and knowledge. Dutfield has broadly addressed the issue raised by “no-patents bio-opponents”, defining the patenting of TK as exploitative and predatory. For instance, he raises the concerns of those favouring the patent system (and, in part, biopiracy practices), by stating that the companies which were granted the patent based on TK, will not keep the local communities from benefiting of their own knowledge, therefore harming no one¹³⁰. Moreover, if a patent is granted, theoretically, it means that it fulfills the requirements according to the current regulations, and the consequences of such assertion are twofold. First off, if the novelty requirement is fulfilled, hence the patent granted, it means that some degree of novelty and innovation has been recognised to that request¹³¹. Consequently, this means that local communities were not exploited since if the knowledge had been recognised as ancient, the criteria would not have been fulfilled, thus no patent would have been issued. Meaning, their knowledge has not been copied or stolen¹³². Dutfield has been very precise in highlighting the fact that these arguments would be plausible only in theory, but that nonetheless, theory and practice in this case tend to differ a lot. According to him, it is unreasonable to argue that indigenous communities have no right of complaining or to feel exploited, as they have endured centuries of violations, isolation and misappropriations. The naiveté and friendliness of many of these peoples is often taken advantage of, and their culture misappropriated without their prior informed consent or sometimes it is even deemed as a good available for all¹³³.

Before concluding, it might be important to reiterate the main features constituting biopiracy. It is a form of misappropriation of genetic resources alongside with the stealing of knowledge owned by indigenous communities, which are later patented usually by a multinational corporation that does not share any revenues or profits with the community providing the GR and the knowledge. As it should be clear by now, the main actors involved mostly the indigenous communities, which are robbed of their culture and,

¹²⁸ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 113.

¹²⁹ *Ibid.*

¹³⁰ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Knowledge*, London, Earthscan, 2004, p. 56.

¹³¹ *Ibid.*

¹³² *Ibid.*

¹³³ *Ibid.* p. 58.

as it will be demonstrated, deprived of their own rights. On the other hand, transnational corporations are another main actor, whose liability according to international law is yet a very debated topic. To conclude, biopiracy has proved to be a challenging issue damaging communities worldwide and depriving them of their rights and of the respect, which should be granted to them. Moreover, it should be recognised as a crime and regulated by international laws, which are now unfortunately lacking to do so.

CHAPTER 2: ACTORS

1. States and individuals

The following chapters will aim at providing a perspective on those actors who are directly, although willingly or unwillingly, involved in the process of biopiracy. In particular, transnational corporations are those groups of actors who are actively involved in biopiracy: as it will be demonstrated, they carry out actions and behaviours, which prompt biopiracy. Indigenous people, on the other hand, are directly affected but indirectly involved: in most of the occasions, they are unaware of their rights and of the dangers of sharing their knowledge and resources, thus, they could be considered as passive actors. NGOs instead, can be considered both: sometimes they are actively engaged in the fight against biopiracy either by exposing TNCs or by raising awareness about the issue; while in other cases, they play an important role, yet not expressively linked to fighting biopiracy itself, for instance, by being representatives or advocators for indigenous communities or by educating them about their rights and possible dangers, which might affect them.

Before moving on to outlining the role of biopirates and their victims, it is important to state the role that States and individuals play in this regard. According to international law, States are the first category of subjects of international law, meaning that they are capable of possessing or exercising rights and duties under international law¹³⁴. Nonetheless, the concept of personality in international law has been long debated and is still considered a relative concept. International legal personality denotes the ability to act within the boundaries of the international law system, though what does this actually entail? According to Dixon, the main capacities of an international legal person are: firstly, to make claims in front of and to be subject to international courts and tribunals; secondly, to be able to make binding international agreements with other subjects of international law; thirdly, to enjoy immunities from the jurisdictional courts of other States¹³⁵. The third point is particularly relevant, since it is based on the international law principle, stating that, since all States are equals in international law, no equal sovereign power could judge another equal sovereign power (*par in parem non habet imperium*), therefore States are immune from the civil and executive jurisdiction of another State, for all of those actions defined as *jure imperii*, namely actions carried out by a State as a sovereign entity¹³⁶. Furthermore, as Carreau and Marrella notice, States are the only ones, to be subject to all the norms of international law. States can thus be considered as the original subjects of international law, since they are both the creators and the subjects of immediate and direct acts and norms of international law¹³⁷.

¹³⁴ M. DIXON, *Textbook on International Law*, 6th edition, Oxford, Oxford University Press, 2013, p. 115.

¹³⁵ *Ibid.* p. 116.

¹³⁶ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 72.

¹³⁷ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 333.

Once established the fact that States are primary subjects of international law, how can they be recognised as such according to international law? The Montevideo Convention on Rights and Duties of States, recognises at Article 1 four fundamental characteristics that States must possess in order to be recognised as subject of international law: a permanent population, a defined territory, a government and the capacity of establishing relations with other States. Interestingly, since international law is not fixed but constantly evolving, it is now commonly recognised that States, in order to be subjects of international law must possess three characteristics: defined territory, population and sovereignty, as reiterated by the Arbitration Commission of the European Conference on Yugoslavia¹³⁸.

Two further principles have been recognised as constitutive of a State's personality, which are clearly entangled: effectiveness and independence. The latter, is connected to the fourth criteria enlisted in the Montevideo Convention, namely the capacity of establishing relations with other States. As a matter of fact, legal independence can be described as occurring when a State, exercises its rights, duties and activities within the boundaries of its territory and is by no means subject to the lawful legal authority of another State¹³⁹. Effectiveness is the second principle, which is fundamental for establishing whether if a State can be considered a subject of international law, and it is connected to the first three criteria set by the Montevideo Convention. Effectiveness refers to the ability of a State to operate as one¹⁴⁰. Indeed, effectiveness can be demonstrated when a State has the effective control over a precise population on a given territory, which is directly connected to the previous principle, since, in order to carry out effective control, the government of the State must be autonomous and independent from the authority of any other State or international entity¹⁴¹. International law recognises exceptional although only temporary conditions, in which entities having lost actual effectiveness on their territory can still survive and keep the status of subjects of international law: this is the case of exiled governments and failed State. The latter not only happens in the event in which the government has lost effective control over the territory, but also if it has lost the monopoly over the use of force, thus being unable of carrying out the essential functions of a government¹⁴².

Lastly, before entering in the analysis of the complex status of individuals in international law, it is worth mentioning one last element, which has a decisive relevance in international affairs, but which does not constitute legal personality, that is recognition. It refers to the acknowledgment of one State with the other, meaning that each State accepts the other as entitled to statehood according to international law and recognises its ability to operate as a State. States acknowledge themselves as equals. According to Dixon,

¹³⁸ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 60-61.

¹³⁹ M. DIXON, *Textbook on International Law*, 6th edition, Oxford, Oxford University Press, 2013, p. 120.

¹⁴⁰ *Ibid.* p. 131.

¹⁴¹ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 60-61.

¹⁴² *Ibid.* p. 61.

there are two main theories on the effects of recognition related to the legal status of an entity: declaratory theory and constitutive theory¹⁴³. The first one establishes that the legal personality of a State does not depend on recognition by other States: the legal status can be only conferred according to the rules and norms of international law, therefore recognition is not decisive and does not determine statehood, as it is just the acknowledgement of a pre-existing legal capacity. On the other hand, constitutive theory denies that international personality is conferred according to the provisions of international law and recognition is perceived as a necessary precondition to the existence of States. Therefore, according to this theory, if the international community does not acknowledge the existence of a State as such, it cannot be considered a State and therefore have international legal personality. Thus, if a State is not recognised as one, it is not one at all¹⁴⁴.

Cassese nonetheless contests constitutive theory for three main reasons: first, because it contrasts with the effectiveness principle; secondly, it contradicts the equality principle among States, since already existing States would have some sort of power to confer recognition and thus legal personality to an entity; lastly, it would not be consistent from a logical perspective, since an entity would have legal personality only for those States which have actually recognised it but not for the others, and according to Cassese this contrasts with the reality of facts¹⁴⁵. The author concludes by stating that following a political perspective, recognition demonstrates the willingness of States to build international, commercial and political relations with the newly recognised State. In this regard, recognition has also a juridical value (though not a constitutive one), as States which recognise another one, acknowledge that said entity possess all the legal requirements according to international law establishing international legal personality¹⁴⁶.

The legal personality of individuals in international law is a very complex and debated matter. Historically, the issue of legal personality of individuals arose related to piracy, as the international system tried to ensure that those individuals committing acts of piracy were properly and accordingly punished, as they hindered and threatened the well-being of States in the high seas and the security of international trade. As it was previously mentioned, piracy has been recognised as a crime under universal penal jurisdiction, meaning that every State, which captures a pirate, can enforce its own jurisdiction over them¹⁴⁷. Following this path, in the past, international norms, which tried to reach individuals dealt mostly with international criminal acts. Other international norms could only reach individuals through national legislation, meaning that it was the duty of the national legislator to transcribe international norms into internal penal regulations. With the exception of Nuremberg and Tokyo's tribunals, in the 1990s the international legal system became more and more aware of the need to punish and repress some

¹⁴³ M. DIXON, *Textbook on International Law*, 6th edition, Oxford, Oxford University Press, 2013, p. 132-133.

¹⁴⁴ M. DIXON, *Textbook on International Law*, 6th edition, Oxford, Oxford University Press, 2013, p. 133.

¹⁴⁵ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 62-63.

¹⁴⁶ *Ibid.* p. 63.

¹⁴⁷ *Ibid.* p. 207.

categories of international criminal acts¹⁴⁸. As a matter of fact, it can be clearly stated, that the international norms addressing international crimes do create obligations for individuals: if they do violate such norms, international responsibility follows and they have to answer accordingly. This is a particular sector in which the international legal system can directly reach individuals, without the mediation of national legislations¹⁴⁹.

Following the examples set by the Nuremberg and Tokyo experiences, other International Penal Courts were issued, to tackle episodes of international crimes, such as for example the International Penal Court for the Former Yugoslavia and Rwanda, both established between 1993 and 1994 by the UN Security Council through resolution 827 and 955 respectively. These two Tribunals were created after tremendous and horrific criminal acts were committed at the expenses of so many individuals, that no national jurisdiction could have faced the imputations and sentences properly¹⁵⁰. These other examples were precursors for the establishment of the International Penal Court of Justice (ICC-CPI), instituted in 1998 through the Rome Treaty and entered into force in 2002, which is the first permanent Court having the legal personality and capacity to address international criminal acts perpetrated by individuals which fall under the following categories: genocide, crimes against humanity, war crimes and international aggression¹⁵¹.

In 1951, the international lawyer Josef Kunz stated that:

“The proposal of some to make individuals direct subjects of international law and to grant them a right of action in a special international court against their own state, has no chance to be realized, for theoretical as well as for practical reasons. Theoretically, it must be understood that our international law and the United Nations Charter are based on the principle of the sovereignty of states... The practical reason is the simple fact that the states are not willing and ready to accept such proposals.¹⁵²”

Nowadays though, the dominant tendency is that of providing much more importance to the role of individuals in international law, not only under a perspective of repression of criminal acts and punishments, but mostly recognising a much more wide protection to individuals under the international juridical system. That is of course a consequence of the development of the human rights doctrine, which is at the basis of the international system. Nonetheless, protection can be interpreted at two levels: first of all, international law accords protection to individuals in a vulnerable condition such as stateless people, namely people who no longer have citizenship; and refugees, or people who in spite of having a

¹⁴⁸ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 208.

¹⁴⁹ *Ibid.* p. 207-208.

¹⁵⁰ *Ibid.*

¹⁵¹ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 496-497.

¹⁵² S. MOYN, *The Last Utopia: Human Rights in History*, United States of America, Belknap Press of Harvard University Press, 2010, p. 187.

citizenship are forced to flee their country of origin due to political, religious or racial discrimination, thus they are entitled to a certain international legal protection¹⁵³. Secondly, some categories or groups of individuals, such as minorities or indigenous people, have been recognised and entitled to rights under international law, as it was clearly established in the previous chapters analysing indigenous people's condition. To conclude, it can be clearly stated that there are no international norms enforcing duties onto individuals, thus no international legal personality is recognised to individuals, even though there are some instruments, such as human rights conventions, that recognise rights to individuals or some groups¹⁵⁴.

Establishing the international role of States, as the primary subjects of international law, and individuals, even though not entitled to international subjectivity, was necessary in light of the fact that both of them play fundamental parts in regard to biopiracy. As a matter of fact, States as subjects of international law are also subjects of the Conventions, which will be extensively explained in the following chapter and are consequently entitled to protect the rights of the individuals within their territories. For instance, with regard to cultural rights, the right to participate in cultural life targets individuals of course, but this right can only be enjoyed if States guarantee it and abstain from hindering its enjoyment¹⁵⁵. To ensure that this particular right is experienced some conditions have to be met, as it will be explained, and States have the duty to enact measures and mechanisms to make sure that individuals can freely participate in their cultural life without discrimination.

As a matter of fact, Janet Blake explains how three main obligations are placed on States with regard to cultural rights, namely the obligations to respect, protect and fulfil, thus establishing upon States duties to assure the enjoyment of rights. In this sense the role of States is fundamental and must be clearly established¹⁵⁶. For instance, Farida Shaheed, the former independent expert in the field of cultural rights, highlighted in several of her reports the obligations that States have in ensuring that cultural rights are respected and protected, without interference and discrimination of sort¹⁵⁷.

Not to mention the fact that, according to the Convention on Biological Diversity, States are ultimately in charge of owning GR and of their disposal, which means that they are the ones, according to international law, to decide how their GR should be used, and not indigenous people. In this sense, the protection that States should accord to GR, TK and indigenous rights has been lacking, otherwise no biopiracy examples would have happened. To conclude, even though States are not actually the ones performing the act as TNCs do, they are the ones who have the means at their disposal to redress and repress the acts, ensuring the protection of resources and rights of the keepers of the traditional knowledge associated to it.

¹⁵³ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 473-474.

¹⁵⁴ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 194.

¹⁵⁵ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 300.

¹⁵⁶ *Ibid.* p. 302.

¹⁵⁷ United Nations General Assembly Human Rights Council, Seventeenth Session, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, March 21st, 2011.

Individuals are entitled to several rights, but most importantly, for the context of this dissertation, human rights. Indigenous people, or in this case groups of individuals lacking international capacity have less power to tackle the aforementioned issues properly, and must be aided and supported by those entities which should ensure their rights and protection according to international law: States.

2. Indigenous People

The concept of indigenous people is not new to history, although it is not a history of recognition and freedom. Indigenous people have endured centuries of violations and abuses, through colonization or foreign occupation. Not only, they were in many cases murdered and confined to isolated areas far more narrow than their own lands, and seldom were they given recognition of sovereignty of that very land. Their issues gained momentum only after the fall of the Berlin Wall, as the world gradually entered the period of decolonization. Before that, two attempts to bring the issues of indigenous people to the attention of the international community are worth mentioning: between 1923 and 1925, two leaders of indigenous communities went to the League of Nations to plead for their cause¹⁵⁸. In the first case Cayuga Chief Deskaheh, representative of Six Nations of the Iroquois arrived at Geneva and asked for a hearing at the League of Nations, but he was denied access. Fortunately, his journey did not end there as he travelled throughout Europe and found a very receptive audience for his cause. The second attempt, in 1925, sees as protagonist the Maori religious leader W. T. Ratana, who went first to London to ask for audience to King George V and then to the League of Nations. In both cases his requests were denied. He was trying to renegotiate the ending of the Treaty of Waitangi, which gave Maori people sovereignty of their own lands¹⁵⁹.

With regard to the international system on the other hand, in the 1950s the International Labour Organization (ILO) posed its attention on situations of forced labour among groups of individuals, who were identified as “native populations”. It was the first international organization, which gave attention to such issues, also thanks to the efforts of several NGOs, many of which were indigenous people’s organizations¹⁶⁰. The concerns addressed by ILO later turned into the ILO Convention No. 107, or the Convention Concerning the Protection and Integration of Indigenous and Other Tribal and Semi- Tribal Populations in Independent Countries. This Convention was later criticised by many indigenous communities, but its importance must not be underestimated, as it led the way to the ILO Convention No. 169 of 1989, which will later be explained¹⁶¹.

All these attempts, even if most of them did not conclude with a favourable outcome, were to some extent fundamental in raising awareness internationally over indigenous people’s issues. In 1972, the United Nations Sub-Commission on Prevention of Discrimination and Protection of Minorities released the “Martínez Cobo Study”, a study conducted by the Special Rapporteur Jose Martínez Cobo, aimed at investigating discriminations against indigenous populations. He was the first one to provide a working

¹⁵⁸ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World’s Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 13-14.

¹⁵⁹ *Ibid.* p. 14.

¹⁶⁰ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 4.

¹⁶¹ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World’s Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 13-14.

definition of indigenous people:

“Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural, social institutions and legal systems.”¹⁶²

The Cobo definition, as it was called, was the first attempt to outline the concept of indigenous people, and although there is no agreed upon definition, this one and the one provided by ILO Convention No. 169 of 1989 are the two more widely accepted. The above mentioned one in particular focuses on a number of traits, which are similar for all indigenous communities, namely: a past history of occupation, common ancestors, culture, language and occupation of certain territories. In his report, the Special Rapporteur included also two fundamental criteria, for an individual to be recognised as indigenous person: self-identification and acceptance by the community¹⁶³.

Cobo’s work was fundamental in raising awareness over the issues of indigenous people, and as a consequence the study laid the foundations for the establishment of a UN mechanism, dedicated exclusively at addressing indigenous people’s matters: the Working Group on Indigenous Populations. The Committee’s main functions were to address their rights and develop standards concerning such rights, which ended with the drafting of a proposal for a declaration on the rights of indigenous people in 1993. The Human Rights Council later adopted the draft in 1995¹⁶⁴. The Working Group was abolished in 2007 and substituted by the Expert Mechanism on the Rights of Indigenous People, a subsidiary body of the Human Rights Council, composed of five experts whose task is to provide expertise on matters regarding indigenous people¹⁶⁵.

In that same period, many initiatives were brought to life within the framework of the United Nations, such as the UN Voluntary Fund for Indigenous Populations in 1985, the proclamation of the International Year of the World’s Indigenous People in 1993 and of the International Decades of World’s Indigenous People in 1995. Moreover, always within the UN, two main mechanisms are worth mentioning, which were established to safeguard and further develop the rights of indigenous people: the UN Permanent Forum on Indigenous Issues, an advisory body of ECOSOC, and the Special Rapporteur on the rights of

¹⁶² J. B. HENRIKSEN, *Key Principles in Implementing ILO Convention No. 169*, Programme to Promote ILO Convention No. 169, 2008, p. 5.

¹⁶³ *Ibid.* p. 6.

¹⁶⁴ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 4.

¹⁶⁵ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World’s Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 3.

indigenous peoples¹⁶⁶. The first one has a mandate, which encompasses issues related to economic, social and cultural matters as well as human rights, environment, and development. The Special Rapporteur's specific mandate on the other hand, is aimed at identifying threats and obstacles, which would prevent them from the full enjoyment of their human rights. He is then asked to write recommendations and reports proposing solutions to remedy those violations¹⁶⁷.

The ILO Convention No. 169 of 1989 is another example stressing the need to identify and further develop issues related to indigenous people. As it was already mentioned, ILO was the first international organization to actually address such issues with Convention No. 107, which nevertheless received quite a few critics. As a matter of fact, Convention 107 did not provide any clear definition of indigenous people; furthermore, it did not clearly differentiate between tribal and indigenous people¹⁶⁸. Such impasses were all overcome with the adoption of the following Convention, No. 169 of 1989 which clearly states who shall be recognised as indigenous, specifically in Article 1.1(b), when indicating to whom the Convention does apply:

“peoples in independent countries who are regarded as indigenous on account of their descent from populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present states boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.”¹⁶⁹

Interestingly, at Article 1.1(a), the Convention indicates that it applies also to tribal people, making a distinction between indigenous and tribal people, who are defined as:

“peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations.”¹⁷⁰

The two definitions surely demonstrate some differences, as for historical continuity, territorial connection and distinct economic, social, cultural and political institutions, which are all features

¹⁶⁶ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 4-5.

¹⁶⁷ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 5.

¹⁶⁸ International Labour Organization, *Indigenous and Tribal Populations Convention No. 107*, Geneva, June 26th, 1957 available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C107

¹⁶⁹ International Labour Organization, *Convention 169 Concerning Indigenous and Tribal People*, Geneva, June 27th, 1989 available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

¹⁷⁰ International Labour Organization, *Convention 169 Concerning Indigenous and Tribal People*, Geneva, June 27th, 1989 available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

belonging to indigenous people, and not characterising tribal peoples. These differences nonetheless, do not entail any legal implication with regard to the rights that the Convention grants to both peoples¹⁷¹. The ILO definition provided by Convention No. 169 was not immune from critics. Surely, it improved the previous definition of Convention No. 107, but many advocates of indigenous cause criticised the requisite of the colonial experience, in order to be recognised as indigenous. For instance, this requisite is hardly applicable to some cases of Africa and Asia, where other dominant peoples living in the same continent or region had marginalized more submissive groups¹⁷². Moreover, differentiating Africans or Asians between indigenous and non-indigenous creates classes of citizens with different rights. The impasse was solved by the Working Group of Experts on Indigenous Populations, which claimed that the definition must be understood in a wider context than only colonial experience, relying mostly on self-definition, and then to culture and traditions¹⁷³.

The United Nations Declaration on the Rights of Indigenous Peoples is another fundamental document, when referring to the rights of indigenous people. It was adopted by the UN General Assembly on September 13th, 2007, through resolution 61/295¹⁷⁴. The importance of the document lies not only on the fact that it clearly states the rights and human rights of indigenous people, but also it defines State's accountability, if violations occurred. Furthermore, the Declaration does not create any new or special right for indigenous people; it only restates human rights standards, which had been developed until its adoption. Moreover, it highlights the interdependent and indivisible nature of human rights norms worldwide, and it is increasingly agreed that some norms inscribed in the Declaration constitute customary international law¹⁷⁵. Although the Declaration indicates the rights of indigenous people, it does not provide criteria to be recognised as such. Therefore, the document includes no definition of indigenous people, as it only recognises them as the beneficiaries of the rights it encompasses¹⁷⁶.

Since it is a declaration adopted through a resolution, the document is not considered as legally binding. Nonetheless, according to the report of the Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people of September 4th, 2009, at paragraph 48, the Rapporteur states that, since the document was adopted with an "overwhelming majority"¹⁷⁷. The declaration embodies the commitment of the Member States of the UN to comply with its provisions and guarantee

¹⁷¹ J. B. HENRIKSEN, *Key Principles in Implementing ILO Convention No. 169*, Programme to Promote ILO Convention No. 169, 2008, p. 5.

¹⁷² United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 6.

¹⁷³ *Ibid.*

¹⁷⁴ *Ibid.* p. 197.

¹⁷⁵ *Ibid.* p. 37.

¹⁷⁶ J. B. HENRIKSEN, *Key Principles in Implementing ILO Convention No. 169*, Programme to Promote ILO Convention No. 169, 2008, p. 5.

¹⁷⁷ United Nations General Assembly, *Report of the Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people*, A/64/338, September 4th, 2009 available at <https://undocs.org/A/64/338>

the rights of indigenous people¹⁷⁸. As a matter of fact, the declaration was voted by the majority of the Member States of the UNGA, with only four Members voting against: Australia, Canada, New Zealand and the United States of America, and eleven abstentions. This demonstrates the large consensus that the cause of indigenous people had gathered, reinforced by the fact that the four countries voting against have changed their position throughout time. The negotiations of the Declaration covered a period of 20 years, and during that time indigenous people and States were actively involved in the negotiating process, trying to raise awareness and consensus over the issue. The large participation of States and indigenous people to the process reinforces the wide advocacy and consent that the declaration has in the international framework¹⁷⁹.

To conclude, it can be clearly stated that the cause of indigenous people has been recognised internationally as deserving a wide degree of attention. Several UN instruments, as well as NGOs have dedicated their work and efforts to the wellbeing and development of indigenous communities. It is also clear that their existence and status have been legally recognised, but it might be important to dwell upon their rights, before moving to the explanation of what is indigenous or traditional knowledge.

¹⁷⁸ United Nations General Assembly, *Report of the Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people*, A/64/338, September 4th, 2009 available at <https://undocs.org/A/64/338>

¹⁷⁹ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 39.

2.1 Indigenous people's rights

As much as all individuals all over the world, indigenous people are entitled to fundamental Human Rights, although they also bear specific rights because of their unique position as first peoples of their nations¹⁸⁰. The rights of indigenous people are enshrined in three main groups of documents, though not all legally binding: the International Covenants, the ILO Conventions, and the UN Declaration on the Rights of Indigenous People. With regard to the first group, the international covenants refer to those documents protecting and ensuring Human Rights internationally, such as the Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR)¹⁸¹.

The UDHR is recognised as a forerunner for the codification of the following covenants, encompassing first and second-generation rights. These conventions are binding legal documents for Members parties to the Covenants, thus creating a set of internationally legal obligations, which mirror the core principles of the United Nations¹⁸². With regard to the context of this dissertation, it is also important to mention that some rights of indigenous people are also protected by other international conventions, such as for example the Convention on Biological Diversity (CBD), which for example at Art. 8 obliges States parties to maintain, respect and protect the knowledge of indigenous people¹⁸³. The CBD will be the focus of the following chapter, therefore, for now, I will linger on the rights enshrined in the three major groups of international documents.

I would like to begin the explanation of indigenous peoples' rights, by mentioning a crucial right, considered as well as some sort of forerunner for the others: the right to self-determination. As a matter of fact, this particular right has been internationally acknowledged as a fundamental prerequisite in order to exercise all the other human rights. According to both ICCPR and ICESCR, self-determination entails the free determination of each individual's political status, and the ability to pursue their economic, social and cultural development¹⁸⁴. Under international law, this particular right is considered customary, or *jus cogens*. The enjoyment of this right is a prerogative in order to exercise all the other rights enshrined in both Covenants, and the UDHR¹⁸⁵.

The ILO Conventions, and particular the revised Convention No. 169, provide standards of rights and protection to indigenous people, ranging from environment, to development and direct participation.

¹⁸⁰ Amnesty International: <https://www.amnesty.org.au/how-it-works/what-are-indigenous-rights/>

¹⁸¹ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 201.

¹⁸² *Ibid.*

¹⁸³ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 13.

¹⁸⁴ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p.53.

¹⁸⁵ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 194.

Again, these two treaties are only internationally legally binding documents dealing with indigenous rights, these rights are not special, but articulations of universal human rights¹⁸⁶. Convention No. 169 is divided into ten parts: the first twelve articles refer to the general policy. As it was already stated, Article 1 provides definitions, or indications, to whom the Convention applies. Article 2 underlines the responsibility that states have towards indigenous people, which is to safeguard and protect their rights, while Article 7 states that indigenous people shall have the right to decide their own priorities when it comes to development, as it firstly affects their lives. Article 8 declares that indigenous people have the right to retain their customs and institutions, when these are not incompatible with fundamental rights. Article 12 protects them from abuses and assures protection of their rights¹⁸⁷.

The second section concerns land rights. It recognises the rights to land and natural resources, based on the criteria of territorial occupation, namely the land where indigenous people have lived throughout time. In particular, Article 15 grants access, use, management and conservation of their own resources, meaning those pertaining to their land¹⁸⁸. The third and fourth parts are dedicated to the recruitment and conditions for employment, as well as to vocational trainings, handicrafts and rural industries. The fifth part covers social security and health, at Articles 24 and 25, which shall be granted and made available without discrimination. The sixth part is concerned with education and means of communication, and Article 28 focuses on children's education¹⁸⁹. The latter parts regard across border operations, administration, and in addition the general and final provisions. Clearly, the Convention covers a wide range of issues applying to indigenous peoples, from employment to education and so forth. Nonetheless, its fundamental core is the definition provided by Article 1, and the consensus reached by the Convention, which stresses the value of the Convention itself¹⁹⁰.

Lastly, with regard to the UN Declaration, as it was stated in the previous chapter, the declaration is not legally binding, although its adoption witnessed a large consensus among members of the international community. Moreover, the language that it uses imposes responsibilities upon States. It does not create new rights; but indeed it provides an interpretation of the human rights enshrined in other international instruments, demonstrating its significance towards the eradication of human rights violations, against the over 370 millions of indigenous people living worldwide¹⁹¹. Right after the preamble, the declaration

¹⁸⁶ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 201.

¹⁸⁷ International Labour Organization, *Convention 169 Concerning Indigenous and Tribal People*, Geneva, June 27th, 1989 available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

¹⁸⁸ International Labour Organization, *Handbook for ILO Tripartite Constituents: Understanding the Indigenous and Tribal Peoples Convention, 1989 (No. 169)*, International Labour Office, Geneva, 2013, p. 22.

¹⁸⁹ International Labour Organization, *Convention 169 Concerning Indigenous and Tribal People*, Geneva, June 27th, 1989 available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

¹⁹⁰ International Labour Organization, *Handbook for ILO Tripartite Constituents: Understanding the Indigenous and Tribal Peoples Convention, 1989 (No. 169)*, International Labour Office, Geneva, 2013, p. 1-2.

¹⁹¹ United Nations Declaration on the Rights of Indigenous People Website: https://www.un.org/esa/socdev/unpfii/documents/faq_drips_en.pdf

begins by claiming that indigenous people have the right to the full enjoyment of all human rights enlisted in the UN Charter, the International Covenants and human rights law, thus remarking that as individuals, they deserve to be granted the same rights that everybody else is. Articles 3 and 4 restate the fundamental value of self-determination, already declared by the ILO Convention and other international instruments¹⁹².

Article 6 covers the right to nationality, while Article 7 covers the right to life. Indigenous people are also entitled to equality and non-discrimination, although the Special Rapporteur has clarified that a holistic approach in this case is advisable: as a matter of fact, it is fundamental that States in such cases remember the special characteristics that differentiate indigenous people from wider society, especially when applying the non-discrimination principle. These rights are believed, in this particular case, to offer a dual protection: on the one hand, it protects the way of living of indigenous people, namely their indigeness, while on the other, it protects them from isolation and potential exclusion from the outside world¹⁹³.

Interestingly enough, seventeen of the forty-five articles of the Declaration concern rights related to cultural integrity, its protection and its promotion, such as for example Art. 8, which prohibits the destruction of culture, or Art. 13, which allows indigenous people to use and transmit their language, customs and so forth. In the context of this dissertation, of particular importance are also Articles 28 and 31. Specifically, Article 28 states that indigenous people can and must expect restitution or fair and just compensation, were their lands or resources taken, occupied or confiscated¹⁹⁴. Furthermore, Article 31 at paragraph 1 declares that they have the right to maintain control or protect their traditional knowledge, as well as their sciences and cultures. At paragraph 2, the Article affirms that States should take effective measures to protect such rights¹⁹⁵. This is surely of importance with regard to biopiracy cases, as it was demonstrated that often it entails the misappropriation of traditional knowledge, which is nonetheless protected by international instruments. However, this will be the focus of the next chapter.

The aforementioned interest towards the protection of culture and traditional knowledge goes hand in hand with the enjoyment of land rights. In this case too, a holistic approach is desirable, as it is believed that development should proceed in parallel with culture and identity. In many cases, due to modernization or industrialisation, culture and identity of indigenous people have been diminished or violated, since they were (or still are) considered as obstacles to progress. Therefore, development

¹⁹² United Nations Declaration on the Rights of Indigenous People, New York, September 13th, 2007 available at https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

¹⁹³ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 10.

¹⁹⁴ United Nations Declaration on the Rights of Indigenous People, New York, September 13th, 2007 available at https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

¹⁹⁵ *Ibid.*

favouring culture and identity means also allowing for a greater self-governance over lands and resources¹⁹⁶.

In order to enjoy their rights, indigenous people need to be aware of them and to be aware of how to exercise them. Therefore, programmes of education and awareness raising are of fundamental importance, as it was in several occasions advocated by the UN and many NGOS. The isolation and sometimes exclusion not only during present day but also in the past, has rendered this process particularly difficult, since it is also arduous to reach indigenous people geographically, as in many cases they live in remote rural areas¹⁹⁷. It should be clear by now, that indigenous people are entitled both of all the rights that individuals exercise all over the world, as well as of special rights granted to them by the abovementioned legally and non legally-binding instruments. For the aim of this dissertation, it is important to bear in mind that they are entitled to fundamental human rights and to cultural rights. Within cultural rights, traditional knowledge holds a fundamental role, as it will be explained in the following chapter.

¹⁹⁶ United Nations Human Rights Office of the High Commissioner and Asia Pacific Forum, *The United Nations Declarations on the Rights of Indigenous People, A Manual for National Human Rights Institutions*, HR/PUB/13/2, August 2013, p. 34.

¹⁹⁷ *Ibid.* p. 60.

2.2 Indigenous or traditional knowledge

Indigenous or traditional knowledge is a complementary feature in biopiracy cases: its relevance has been already clarified in the previous chapters, although a definition has not been provided yet. As for indigenous people, there are several legal instruments, which guarantee the protection of traditional knowledge, but at the same time they do not determine precisely what TK is.

First of all, traditional knowledge is usually associated with indigenous people, although traditional does not entail that the knowledge is old or ancient, but rather “tradition-based”: as a matter of fact, it usually mirrors the tradition and culture of the communities. Hence, traditional indicates the way in which the knowledge is created, protected and transmitted. It is usually considered as collective, thus property of the entire community¹⁹⁸. The UN has identified TK as: “*the complex bodies and systems of knowledge, know-how, practices and representations maintained and developed by indigenous people around the world, drawing on a wealth of experience and interaction with the natural environment and transmitted orally from one generation to the next*”¹⁹⁹. The role that TK plays in the daily lives of indigenous communities is extremely relevant, since it is embedded in their institutions and in community habits; it also shapes the relationships both among themselves and with the environment, as well as their rituals. With regard to TK, the right to self-determination has fundamental value, since it assures indigenous people the rights to manage their heritage, knowledge and biogenetic resources, which have to be protected comprehensively²⁰⁰.

An interesting question needs to be addressed: are indigenous and traditional knowledge the same or do they differ on some degree? Moreover, are TK and folklore related, or are they only similar issues? The expression “traditional knowledge” is often equated with “indigenous knowledge” (IK) and they are in many occasions used interchangeably, although IK has a more precise meaning than TK. As a matter of fact, IK refers to a specific body of knowledge pertaining to a particular community, involving a distinct form of understanding of life, nature, the environment and relationships²⁰¹. Of course, it includes examples that relate both to tangible and intangible cultural heritage: such as for example, architectural and building ideas, or healing systems such as Ayurveda, but also theories about universe, cosmos and calendar. A thorough definition of IK has been offered by the United Nations Environmental Programme, which stated that²⁰²:

¹⁹⁸ S. A. HANSEN and J. W. VANFLEET, *Traditional Knowledge and Intellectual Property: A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting their Intellectual Property*, Washington DC, AAAS, 2003, p. 3.

¹⁹⁹ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 64.

²⁰⁰ *Ibid.* p. 65.

²⁰¹ R. C RÿSER, *Indigenous People and Traditional Knowledge*, Centre for World Indigenous Studies, Berkshire Publishing Company, 2011, available at http://www.academia.edu/841635/Indigenous_and_Traditional_Knowledge

²⁰² *Ibid.*

“Indigenous Knowledge (IK) can be broadly defined as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. This definition encompasses all forms of knowledge – technologies, know-hows, skills, practices and beliefs – that enable the community to achieve stable livelihoods in their environment. A number of terms are used interchangeably to refer to the concept of IK, including Traditional Knowledge (TK), Local Knowledge (LK) and Indigenous Knowledge System (IKS).²⁰³”

This is of course not a legal definition, although it demonstrates the interest of the UN Programmes related to indigenous matters. Also, the International Bank for Reconstruction and Development (IBRD), commonly referred to as World Bank (WB), has encountered the necessity to clarify what indigenous knowledge is, claiming it to be “the social capital of the poor”²⁰⁴.

Folklore and Traditional Knowledge are not so interchangeable as IK and TK, though they are frequently adopted as features of a culturally related knowledge, folklore in particular. The etymology of the term is particularly interesting, as “folk” means people, and “lore” refers to “a body of traditions and knowledge held by a particular group”²⁰⁵. Moreover, folklore is traditionally older than TK, since, internationally, the first time that folklore was mentioned dates back to the 1970s, while the first time that the term traditional knowledge ever appeared in an internationally relevant document was in 2005²⁰⁶. The UNESCO Recommendation on the Safeguarding of Traditional Culture and Folklore of 1989, addressed folklore for the first time in the last decade of the 20th century, stating that: “*folklore (or traditional and popular culture) is the totality of tradition-based creations of a cultural community, expressed by a group of individuals and recognised as reflecting its cultural and social identity; its standards and values are transmitted orally, by imitation or by other means. Its forms are, among others, language, literature, music, dance, games, mythology, rituals, customs, handicrafts, architecture and other arts*”²⁰⁷. The Recommendation also concerns with the identification folklore, as well as on how to conserve, protect and transmit it. The cooperation of States in this sense is deemed as fundamental, and not only of States among States, but also with NGOs and individuals²⁰⁸.

TK, on the other hand, usually refers to a more generalized system of knowledge, related to healing systems, or art expressions. Again though, a precise and internationally accepted legal definition of TK

²⁰³ R. C RYSER, *Indigenous People and Traditional Knowledge*, Centre for World Indigenous Studies, Berkshire Publishing Company, 2011, available at http://www.academia.edu/841635/Indigenous_and_Traditional_Knowledge

²⁰⁴ *Ibid.*

²⁰⁵ G. DUTFIELD, *Protecting Traditional Knowledge and Folklore*, Geneva, International Centre for Trade and Sustainable Development and United Nations Conference on Trade and Development, June 2003, p. 19 available at https://www.ictsd.org/sites/default/files/downloads/2008/06/cs_dutfield.pdf

²⁰⁶ *Ibid.*

²⁰⁷ United Nations Educational, Scientific and Cultural Organization, *Recommendation on the Safeguarding of Traditional Culture and Folklore*, Paris, November 15th, 1989 available at http://portal.unesco.org/en/ev.php-URL_ID=13141&URL_DO=DO_TOPIC&URL_SECTION=201.html

²⁰⁸ *Ibid.*

has not yet been decided upon, and the first international instrument in which the expression of TK was featured was the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions of 2005. Although it only features the term in its preamble, it recognizes its importance “*as a source of intangible and material wealth*”, specifically related to indigenous people²⁰⁹. The focus on indigenous people was not for granted, although its significance in relation with TK issues, as the debate on indigenous people was only reaching its momentum during those years. As a matter of fact, a few years later, the UNDRIP of 2007, in Art. 31 stated the importance that culture has for those communities²¹⁰.

Since a precise definition seems to be hard to encounter, many scholars have tried to overcome the problem by identifying the various features that outline the notion, as well as the differences with other forms of knowledge, such as for example mere scientific knowledge or western conceptualizations. Therefore, the main elements constituting traditional knowledge are: oral transmission, learning through first-hand experience, holistic approach, intuition rather than analysis, social conception²¹¹. Traditional knowledge is usually connected with spiritual or even collective experiences, and it based on the assumption that human life is not superior to animate or inanimate creatures, and that everything is intrinsically and irremediably connected. Nonetheless, it is not totally unscientific; it is instead scientific to some degree, and most of all medicinal knowledge serves as an example, although it is an extremely adaptive form of knowledge²¹².

The protection of traditional knowledge is an aspect worth mentioning, since TK has increasingly been recognised as an important source of information, applicable to several fields of interest. Of course, its protection is not only fundamental for the well-being of indigenous people, but also for several other reasons, as preserving either environment or priceless cultural heritage, as well as the prevention of biopiracy²¹³. While ILO has concerned itself mostly with the issue of indigenous people, the two international organizations that have mostly dealt with TK and its protection are UNESCO and WIPO. As it was already indicated, UNESCO dedicated several international instruments to either folklore or TK, namely: Recommendation 1989, the 2003 Convention on the Safeguarding of Intangible Cultural Heritage (ICH) and the 2005 Convention²¹⁴. The effectiveness of these legal instruments has been questioned, specifically with regard to the 2005 Convention. Macmillan suggests that its efficacy in

²⁰⁹ United Nations Economic, Social and Cultural Organization, *Convention on the Protection and Promotion of the Diversity of Cultural Expressions*, Paris, October 20th, 2005 available at <http://unesdoc.unesco.org/images/0014/001429/142919e.pdf>

²¹⁰ F. MACMILLAN, *The Problematic Relationship between Traditional Knowledge and the Commons*, in *Cultural Heritage. Scenarios 2015-2017* edited by S. PINTON and L. ZAGATO, Venice, Edizioni Ca' Foscari, December 2017, p. 676.

²¹¹ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 94.

²¹² *Ibid.* p. 95.

²¹³ *Ibid.* p. 97-100.

²¹⁴ G. DUTFIELD, *Protecting Traditional Knowledge and Folklore*, Geneva, International Centre for Trade and Sustainable Development and United Nations Conference on Trade and Development, June 2003, p. 20, available at https://www.ictsd.org/sites/default/files/downloads/2008/06/es_dutfield.pdf

protecting ICH against misappropriations is questionable for two main reasons: the nature of international law and the fact that the document does not constitute the per se protection of ICH. These two elements are connected, since the Convention does not mandate any precise measure against misappropriation, while it only limits types of access, thus safeguarding ICH but not actually protecting it²¹⁵.

WIPO, on the other hand, tackled the issue from a different perspective: TK as intellectual property, in relation with patent law. According to WIPO, traditional knowledge can be interpreted twofold: in a more general sense, including distinctive signs and symbols of TK as well as traditional cultural expressions, thus embodying the very notion of TK itself; or in a narrow sense, such as intellectual know-hows, skills and innovations²¹⁶.

During the 25th session of WIPO's General Assembly in 2000, the Secretariat encouraged the creation of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). The suggestion was favoured by a large number of developing countries, and approved without any formal opposition²¹⁷. The first three sessions of the Committee dealt with one particular pending issue: the misappropriation of TK and how patent law could actually improve benefit sharing. It was commonly recognised that in too many occasions indigenous communities had been victims of unauthorized appropriation of their TK and ICH through intellectual property rights (IPRs)²¹⁸. Therefore the IGC developed two types of approaches: firstly, they requested patent applicants to disclose the origin of genetic resources or of TK when applying for a patent. In theory, mandatory disclosure of origin would avoid monopoly in relation to GR appropriation, including this kind of behaviour into illegal acquisition. Secondly, they tried to widen the availability of public domain TK to patent examiners, to avoid that requests including TK are improperly granted. This includes as solutions: inventories of publications documenting TK and public, possibly online, TK databases²¹⁹.

WIPO was therefore concerned with the active protection of TK. The protection that nowadays is being granted to traditional knowledge is twofold: positive and defensive protection²²⁰. Positive protection focuses on two different aspects: the prevention of unauthorized use and active exploitation by the community itself²²¹. Therefore, positive protection concerns with the creation of a liability regime to

²¹⁵ F. MACMILLAN, *The Problematic Relationship between Traditional Knowledge and the Commons*, in *Cultural Heritage. Scenarios 2015-2017* edited by S. PINTON and L. ZAGATO, Venice, Edizioni Ca' Foscari, December 2017, p. 678.

²¹⁶ WIPO's website: <http://www.wipo.int/tk/en/tk/>

²¹⁷ G. DUTFIELD, *Protecting Traditional Knowledge and Folklore*, Geneva, International Centre for Trade and Sustainable Development and United Nations Conference on Trade and Development, June 2003, p. 15, available at https://www.ictsd.org/sites/default/files/downloads/2008/06/cs_dutfield.pdf

²¹⁸ F. MACMILLAN, *The Problematic Relationship between Traditional Knowledge and the Commons*, in *Cultural Heritage. Scenarios 2015-2017* edited by S. PINTON and L. ZAGATO, Venice, Edizioni Ca' Foscari, December 2017, p. 680.

²¹⁹ G. DUTFIELD, *Protecting Traditional Knowledge and Folklore*, Geneva, International Centre for Trade and Sustainable Development and United Nations Conference on Trade and Development, June 2003, p. 15, available at https://www.ictsd.org/sites/default/files/downloads/2008/06/cs_dutfield.pdf

²²⁰ WIPO's website: <http://www.wipo.int/tk/en/tk/>

²²¹ *Ibid.*

make sure that communities can exercise their rights effectively. Protection and enforcement are decisively more effective through registration²²².

Defensive protection on the other hand is necessary and ensures that third parties do not gain illegitimate or unauthorized IP: some examples are to require patent applicants to disclose the origin of GR associated with TK, to make sure that regulations governing their transfer are respected²²³. The aim of the proposal for the disclosure of origin is to grant fair and equitable benefit sharing, according to the regulations regarding access and benefit sharing. The disclosure could be articulated in three manners: a “weak form” as defined by Dutfield, where disclosure would be expected but not required. The “medium form” requires mandatory disclosure, while the last and strong manner requires patents to comply with the CBD provisions and regulations²²⁴. According to the author, the most desirable form is the latter, in order to avoid a possible conflict with TRIPS provisions. The conflict could be avoided also, by making the disclosure a condition for its enforceability after it has been accorded²²⁵. Even TK databases are considered a good solution for defensive protection.

Prior art is another example of how the defensive protection of patents can be carried out, as it may be helpful in establishing whether if a claimed invention is actually novel. The Patent Cooperation Treaty (PCT) defines prior art at Regulation 33.1(a) as: *“everything which has been made available to the public anywhere in the world by means of written disclosure (including drawings and other illustrations) and which is capable of being of assistance in determining that the claimed invention is or is not new and that it does or does not involve an inventive step (i.e. that it is or is not obvious), provided that the making available to the public occurred prior to the international filing date”*²²⁶. Therefore, prior art in reference to patents, corresponds to already existing knowledge and practices. Curci states that if TK were made available as prior art, this could be held against those patents based on the use of genetic resources, which are identical to those owned by actual TK holders²²⁷.

As it was already stated, the rights of indigenous people are enlisted in several legal documents, including the Convention on Biological Diversity. The CBD includes some provisions, which are dedicated also to the protection of traditional knowledge. At the same time, the safeguarding of TK is also dealt with in patent law and patent treaties, since it is relevant matter for patents, included in the vast field of intellectual property. Nonetheless, this topic, as well as the (un)effective protection of TK by those legal instruments will be examined in the following chapters.

²²² G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 118.

²²³ *Ibid.* p. 110.

²²⁴ *Ibid.* p. 111-112.

²²⁵ *Ibid.*

²²⁶ World Intellectual Property Organization, *Patent Cooperation Treaty Regulations*, Washington, June 19th, 1970 available at <http://www.wipo.int/pct/en/texts/rules/rtoc1.html#note2>

²²⁷ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 211.

3. Transnational corporations

The development of global economy is a phenomenon, which has interested the 20th and 21st centuries. It was prompted by mostly two events: decolonization and the rapid development both of the international regime and of international organizations. These developments allowed also for the growth of transnational corporations (TCNs), although the increasing power that they have gained in the last decades is surely unprecedented. According to UNCTAD, within the 100 strongest economic powers, seventy-one are states and twenty-nine are multinational corporations²²⁸. The role and power that they have at their disposal, mostly in the economic field, allows them to do a large amount either of good or harm, both at the international and at the domestic level²²⁹.

Once again, there is no universally agreeable definition of TCNs, although they are generally recognised as economic entities, that own, control and manage other corporations which operate at the transnational level, meaning in two or more countries²³⁰. Cassese identified three main features of TCNs that are helpful in outlining them: they hold both political and economical power, they interface and trade not only with other corporations but also with States, and they extend their activities not only to one State but also to others²³¹. Usually, they have the nationality of the State in which they are incorporated or in which they have the seat of management. Nonetheless, this criterion changes according to the law of the country: for instance, the USA tends to prefer the doctrine of incorporation, while European countries usually follow the doctrine of the seat of management, according to EU Law²³².

For the context of this dissertation, the most relevant feature regarding TCNs is accountability under international law, and specifically with regard to human rights. It has already been demonstrated, that they play a large and crucial role when it comes to biopiracy. As a matter of fact Shiva has often stated that the interests of those pharmaceutical or cosmetic companies are purely commercial, and they do not care about neither the lives nor the rights of indigenous people. They only seek to take advantage of traditional knowledge and heritage of the communities, without sharing benefits in the end²³³.

The accountability of corporations is intrinsically linked to the issue of subjectivity. For instance, corporations are not subjects of international law, even though they do operate transnationally²³⁴. The matter has been fiercely debated in international law literature, specifically whether if corporations should

²²⁸ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 36.

²²⁹ D. KINLEY and J. NOLAN, *Trading and Aiding Human Rights: Corporations in the Global Economy*, in O. DE SCHUTTER, *Economic Social and Cultural Right as Human Rights*, Cheltenham, Edward Elgar Publishing Limited, 2013, p. 356.

²³⁰ S. DEVA, *Human Rights Violations by Multinational Corporations and International Law: Where from Here?*, Connecticut Journal of International Law, 2003, Vol. 19, p. 3.

²³¹ A. CASSESE, *International Law in a Divided World*, New York, Oxford University Press, 1986, p. 103.

²³² M. HERDEGEN, *Principles of International Economic Law*, 1st edition, Oxford, Oxford University Press, 2013, p. 38.

²³³ V. SHIVA, *Bioprospecting as sophisticated biopiracy*, p. 23, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

²³⁴ P. MUCHLINSKI, *Implementing the New UN Corporate Human Rights Framework: Implications for Corporate Law, Governance, and Regulation*, Business Ethics Quarterly, Issue 1052-150X, January 2012, p. 148.

be regarded as subjects of international law, or if they lack the criteria for subjectivity, and again if they actually provide positive outputs for the hosting countries²³⁵. The debate is not too recent, since already in 1986, Cassese identified the controversial reality of TCNs, which are not proper subjects of international law, even if their actions affect so many internationally and shape the economic world. The author depicted a scenario where neither socialist nor western countries felt at ease with the idea of granting them international standing. It was thought as a way to keeping them under control, although it could be stated, that it has not been that effective²³⁶.

Carreau and Marrella state that even though subjectivity has not yet been conferred to TCNs, they have been recognised a certain “international personhood”. Indeed, they have concluded and still conclude contracts with States, usually to exploit their natural resources. Therefore, they surely have become actors of the international system, although the two authors state that classical juridical categories are inadequate to properly address the ever-growing power and role of multinational corporations²³⁷. No conclusion has been reached yet though, and it would take a whole other dissertation to develop this topic comprehensively.

Consequently, it is important to bear in mind that multinationals are not legally required to observe human rights under international human rights law²³⁸. This, of course, does not entail that MNCs can freely violate human rights with no consequences, though it does mean that it is a responsibility of States to impose legally binding duties on multinationals to cope with human rights law²³⁹. TCNs possess no international rights or duties: they are only subjects to municipal and transnational law²⁴⁰. For instance, MNCs are subject to national jurisdictions, be it either that of the state where they have their headquarter, namely the home State, or the host State, where they carry out their activities. This means, that they can be held accountable for their actions according to those jurisdictions.

Transnational corporations (TCNs) play a vital role in trans-boundary commercial activities, usually carried out in developing countries, and in many occasions, their presence has been perceived critically. The main concerns of the very often developing, hosting country are: imbalances of power, political influence of the TCNs and lack of interest towards environmental and human rights protection. On the other hand though, TCNs necessarily contribute to the technological development of the host country as well as they provide employment for its citizens²⁴¹. The growing concerns regarding the legal status of

²³⁵ E. M. HAFNER-BURTON and K. TSUTSUI, *Human Rights in a Globalizing World: The Paradox of Empty Promises*, American Journal of Sociology, Volume 110, N. 5, March 2005, p. 1388.

²³⁶ A. CASSESE, *International Law in a Divided World*, New York, Oxford University Press, 1986, p. 103.

²³⁷ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 36-37.

²³⁸ P. MUCHLINSKI, *Implementing the New UN Corporate Human Rights Framework: Implications for Corporate Law, Governance, and Regulation*, Business Ethics Quarterly, Issue 1052-150X, January 2012, p. 148.

²³⁹ P. MUCHLINSKI, *Implementing the New UN Corporate Human Rights Framework: Implications for Corporate Law, Governance, and Regulation*, Business Ethics Quarterly, Issue 1052-150X, January 2012, p. 149.

²⁴⁰ A. CASSESE, *International Law in a Divided World*, New York, Oxford University Press, 1986, p. 103.

²⁴¹ M. HERDEGEN, *Principles of International Economic Law*, 1st edition, Oxford, Oxford University Press, 2013, p. 40.

TCNs and the potential threat that they pose to human rights, has led the international community to address the issue in several occasions and through several instruments. Indeed, considerable codes of conduct or soft law instruments have been established, starting from the OECD Guidelines for Multinational Enterprises and ILO Tripartite Declaration of Principles on Multinational Enterprises and Social Policy. These instruments are designed to ensure human rights respect, labour standards and sustainable development, as well as to promote transparency and avoid political interferences of MNCs in the host country²⁴².

The OECD Guidelines for Multinational Enterprises outline the joint expectations and recommendations of States towards the behaviour of TCNs. Their aim is to assure the respect of principles and standards designed for different topics, ranging from environment to transparency, from employment to competition. Unfortunately, the actual impact of these Guidelines has raised many doubts, since it lacks a well-structured enforcement system, and they have been described as too vague and too general²⁴³. On the other hand, the guidelines set out by ILO Tripartite Convention of 1977, which was revised in 2000, are mostly concerned with labour rights. Nonetheless, paragraph eight refers precisely to the respect of human rights, which should be carried out in accordance with the UDHR and the International Covenants. Again unfortunately, the lack of a monitoring system and of implementation mechanisms has rendered the Guidelines almost powerless. Indeed, the choice of language has not been the one applying to a mandatory system, since the sentences are drafted with the use of the term “should”²⁴⁴.

At the UN level, “The Global Compact” (UNGC), namely the Draft Code of Conduct on Transnational Corporations, has been an initiative proposed by the then UN Secretary General Kofi Annan, which aims at enhancing voluntary compliance with human rights standards²⁴⁵. The effectiveness of these standards, has often been put into question: for instance, its structure did not encourage the accountability for TCNs’ actions nor transparency, and the lack of a strong governance, especially with regard to the UNGC, has discouraged the implementation of those principles. Unfortunately, the heavy reliance on voluntary cooperation of the three main groups involved, the UN, States and TNCs has proved insufficient. Moreover, the lack of a monitoring system has not incentivized the enhancement and adoption of the UNGC standards²⁴⁶. Therefore, we could conclude that the system enhancing compliance with human rights standards has not demonstrated particularly effective so far, since human rights abuses and violations have continued to damage developing countries.

²⁴² M. HERDEGEN, *Principles of International Economic Law*, 1st edition, Oxford, Oxford University Press, 2013, p. 40.

²⁴³ S. DEVA, *Human Rights Violations by Multinational Corporations and International Law: Where from Here?*, Connecticut Journal of International Law, 2003, Vol. 19, p. 6.

²⁴⁴ *Ibid.* p. 7.

²⁴⁵ M. HERDEGEN, *Principles of International Economic Law*, 1st edition, Oxford, Oxford University Press, 2013, p. 40.

²⁴⁶ S. P. SETHI and D. H. SCHEPERS, *United Nations Global Compact: The Promise–Performance Gap*, Journal of Business Ethics, Issue 122, 2014, p. 199-200.

It is true that the system of codes of conduct surrounding corporations has not proved entirely ineffective, but the growing abuses perpetrated by TCNs cannot be justified only by their political influence or power. Complicity, with regard to these abuses, has had a consistent role; usually, it is made up of two elements: failure to act and knowledge. Wettstein distinguishes between four types of complicity: direct, indirect, beneficial and silent. Direct complicity refers to the cases in which corporations explicitly and causally engage in human rights violations, while indirect complicity does not entail direct involvement, but rather support²⁴⁷. Beneficial cases refer to when corporations knowingly benefit from human rights abuses, not necessarily committed by them, but from a third party. An increasingly common and seemingly disconcerting form of complicity, is the silent one. Even if the company is not directly involved in the violation, their silence in front of abuses perpetrated either by an oppressive state or third parties, is as unacceptable as the others²⁴⁸. The UNGC has addressed the issue of silent complicity, by stating that:

“Silent complicity describes the way human rights advocates see the failure by a company to raise the question of systematic or continuous human rights violations in its interactions with the appropriate authorities. For example, inaction or acceptance by companies of systematic discrimination in employment law against particular groups on the grounds of ethnicity or gender could bring accusations of silent complicity²⁴⁹.”

According to Wettstein nonetheless, silence does not always entail complicity. To be considered such, it must demonstrate a tacit form of moral approval of the wrongdoing, which is surely quite hard to prove. Clearly therefore, the concept of complicity entails some degree of knowledge that the misbehaviour is actually an abuse damaging the community²⁵⁰.

After having depicted this situation, in which transnational corporations are not efficiently restrained from committing human rights abuses, I would like to dedicate a few words to portray a different picture: a perspective in which, it is actually possible that TCNs cooperate with States and try to share their revenues with the indigenous communities providing the knowledge and the genetic resources. This is the case of Shaman Pharmaceuticals, a company that has declared its engagement in returning part of their profits to all the communities involved. They also ask the local groups with whom they cooperate, what are their needs and how could the company help in meeting them²⁵¹. Shaman develops pharmaceuticals from higher plants, and it collaborates mainly with the community of Aguarana/Huambisa from Peru. The

²⁴⁷ F. WETTSTEIN, *The Duty to Protect: Corporate Complicity, Political Responsibility, and Human Rights Advocacy*, Journal of Business Ethics, Vol. 96, 2010, p. 36.

²⁴⁸ *Ibid.*

²⁴⁹ F. WETTSTEIN, *The Duty to Protect: Corporate Complicity, Political Responsibility, and Human Rights Advocacy*, Journal of Business Ethics, Vol. 96, 2010, p. 36.

²⁵⁰ *Ibid.*

²⁵¹ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 38.

relationship took over than two years to build, but in the end, in 1992, Shaman and the Council of Aguarana/Huambisa signed an agreement, although further negotiations are still in place. The TCN can benefit from the raw materials and resources available in that region, but it must assure conservation management of said resources, as well as health care assistance²⁵². Unfortunately, even though the picture described so far seems to be one that can favour both TCNs and local communities, there is always a flip side of the story. Indeed, Shaman Pharmaceutical has filed for some patent applications, but has failed to recognise the ownership of the knowledge to Aguarana or to sign them as inventors²⁵³.

The aim of this chapter is to outline the surroundings of transnational corporations. They have an extreme power to do harm, particularly to developing countries and, relevant for the topic of biopiracy, to indigenous communities. The Shaman example has demonstrated that even if TCNs try to create fair working relationships, were their commercial interests to remain the first priority, the relationship can hardly be fair and just. Moreover, I have tried to depict the lacks of the international system with regard to corporate accountability, as I believe that it creates a vicious circle where corporations are not held liable for human rights abuses and therefore continue to commit them, sometimes also with compliance by States or third parties. The power that these international actors have is unprecedented and still growing, and they tend not to use it to benefit others, but only their interests. Moreover, and sadly, their victims are usually Third World countries or indigenous communities, who do not have enough power to contrast them. Fortunately, there are some organizations, which have taken such issues as their mission, therefore trying to provide a voice to those who do not have it, and asking for justice.

²⁵² D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 39.

²⁵³ *Ibid.*

4. Support groups fighting against biopiracy

As TNCs, NGOs are not subjects of international law, since they are private entities, therefore their actions, are not disciplined under international law, even though they might have a trans-boundary or international nature. Nonetheless, the controversy existing in regards to the subjectivity under international law of TNCs does not cover also the issue of NGOs, whose actions usually, do not cause the same harms as the activities carried out by TNCs²⁵⁴. The contributions of some NGOs and support groups in the fight against biopiracy have already been mentioned. As a matter of fact, RAFI, which is now ETC group, has contributed to define what biopiracy is, thanks to the efforts of one of its founders, Pat Mooney²⁵⁵. At the same time, the efforts of UN bodies such as UNESCO and the Expert Mechanism on the Rights of Indigenous People, or of some international organizations such as WIPO and its Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore or IGC, continue to have an essential and increasing value. Since the practice of biopiracy has not decreased in recent years, but on the contrary it has become quite common and recognised, the work of these groups has become extremely relevant. Their efforts have differentiated on two fronts mostly: the actual fight against biopiracy and the assistance provided to indigenous communities, although the two issues are clearly entangled.

For instance, the work of the IGC in improving the legal framework surrounding TK is evident, since the 38th session, which will be hosted from the 10th to the 14th of December of this year, will be dealing with TK and traditional and cultural forms of expression. Interestingly enough, every IGC sessions begins with an opening statement from a panel of representatives of indigenous communities. This mechanism grants them a wider framework to provide their direct experiences, concerns and of course, suggestions²⁵⁶.

The Conference of the Parties and the Secretariat of the CBD instead, back in 2011, inaugurated the Decade on Biodiversity, which will end in 2020, following the Strategic Plan for Biodiversity 2011-2020. Their concerns, relevant to the topic of biopiracy, do not entail direct assistance to indigenous people, but the creation of a system that protects biodiversity, and therefore discourages biopiracy practices. The objectives of the decade were to raise awareness on biodiversity issues, to implement the cooperation with Member States and NGOs, as well as to meet the terms of the Strategic Plan for Biodiversity²⁵⁷. The Plan, which is the only means that the Convention has to be implemented at national level, is referred to also the Aichi Targets, since the decision to enforce it was taken in Nagoya, Aichi Prefecture, in 2010. The targets consisted mainly in: addressing the loss of biodiversity, promoting its sustainable use,

²⁵⁴ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 139.

²⁵⁵ ETC Group website: <http://www.etcgroup.org/issues/patents-biopiracy>

²⁵⁶ WIPO website: <http://www.wipo.int/tk/en/igc/panels.html>

²⁵⁷ CBD website: <https://www.cbd.int/doc/strategic-plan/UN-Decade-Biodiversity.pdf>

safeguarding ecosystems, species and genetic diversity and enhance participatory planning and capacity building²⁵⁸.

Some NGOs on the other hand, have given significant contributions and have been directly involved in the fight against biopiracy. Many have focused their efforts on direct action against biopiracy, either through advocacy or raising awareness. Before introducing several of the various NGOs involved, I would like to outline what role NGOs play as actors according to international law, and to tackle more in depth whether if they can be considered subjects of international law or not. Cassese defines NGOs as international associations, composed by either natural or legal persons, not for profit, whose actions have a wide, international and generic appeal. Their efforts are usually directed at influencing the behaviour of States or other international actors²⁵⁹. According to their activity, NGOs can be divided into: humanitarian, economic, scientific, environmental and development-oriented. Usually, they constitute in developed countries, but carry out their activities mostly in developing countries.

The relationships with States are extremely controversial: NGOs usually enact control mechanisms of compliance with international norms and Conventions, they try to shape public opinion and therefore are distrusted by States, who nevertheless also need NGOs support for that very same reason²⁶⁰. Even though they play such an active role and are regarded as fundamental actors in the international arena, they are not subjects of international law as much as transnational corporations. Once again States do not feel at ease with the idea that NGOs might possess some form of subjectivity, which would strengthen their role with the international and civil society. Nonetheless, such ambiguity concerning their legal status, allows NGOs not only to have much more freedom of action, but it also grants them their essential duty as international actors²⁶¹.

The first NGOs worth mentioning is the Action Group on Erosion, Technology and Concentration, or ETC Group, formerly known as RAFI, which have directed their actions to the safeguarding of genetic resources and ensure the sharing of benefits. Their activities have been concentrated in the poorest regions of the world, especially in continents such as Asia, Africa and Latin America. Their mission is portrayed in their name, in the sense that they examine erosion both from an ecological and a human rights perspective. They also investigate the development of new technologies and how it affects Third World countries, as well as the concentration of multinational corporations in those same areas²⁶². With regard to biopiracy, for instance, their contribution had been crucial in exposing internationally Monsanto Corporation, which was accused of biopiracy from the Indian government itself, for the patenting of a

²⁵⁸ United Nations Decade on Biodiversity, Aichi Targets: <https://www.cbd.int/2011-2020/about/goals>

²⁵⁹ A. CASSESE, *Diritto Internazionale*, Bologna, Il Mulino Editore, 2006, p. 190.

²⁶⁰ *Ibid.* p. 191.

²⁶¹ *Ibid.* p. 192.

²⁶² ETC Group website: <http://www.etcgroup.org/mission>

particular kind of wheat, used by Indians to produce a typical kind of bread, chapati²⁶³. Another interesting and quite peculiar input of ETC Group, is the release of the Captain Hook Awards, every once in a while, in collaboration with Syn Bio Watch²⁶⁴. The Awards portray the “worst biopirates” and include governments, TNCs, and international organizations. For example, the latest awards, which were held in 2016, viewed Canada as “The Worst Government Behaviour” by favouring digital piracy and Coca Cola as “The Greediest Biopirates Award”, for profiting from Stevia without sharing the huge revenues with the indigenous community of Guarani living at the border of Paraguay and Brazil, who are the traditional growers²⁶⁵. The several other contributions of ETC Groups in regards to biopiracy will be extensively explained in the chapter dedicated to the case studies.

Another international non-profit organization, which has concerned itself with biopiracy and indigenous people’s issues is Third World Network, a research and advocacy organization involved in several issues, ranging from IPRs to biodiversity, from indigenous issues and human rights to biopiracy. Their goal is to widen the understanding surrounding Third World countries’ conditions and the challenges they are facing. In order to do so, they conduct researches on economics and development of poorer countries; they organize workshops and conferences, and publish reports and books regarding their discoveries. Moreover, they provide a platform representing Third World interests and perspectives at international forums such as the UN and WTO²⁶⁶. Their production in reference to biopiracy has been quite copious, ranging from the well-known and documented Neem Tree case, to Turmeric and the Avon case in Asia. They have been exposing the crimes committed by multinational corporations damaging indigenous communities and misappropriating TK and avoiding benefit sharing²⁶⁷.

Last but not least, it is worth mentioning the work of the French organization France Libertés, established by Danielle Mitterrand in 1986. Their mission is to defend human rights, through the promotion of local initiatives favouring change and enforcement of human rights, as well as of initiatives for raising awareness, information and the mobilization of citizens²⁶⁸. The organisation has advocated also against biopiracy, and their efforts have rendered particularly useful in the case of the patent issued by the French Research Development Institute, for the isolation of the Simalikalactone E, derived from *Quassia Amara*, which they intended to use for medicines curing malaria. Nonetheless, the conclusions reached by the Institute were drawn from Creole people’s knowledge in French Guiana. France Libertés accused the Institute of biopiracy and was able to put the granting of the patent²⁶⁹ into question. They delivered a

²⁶³ R. RAMESH, *Monsanto’s chapati patent raises Indian ire*, The Guardian, New Delhi, January 31st, 2004, available at <https://www.theguardian.com/science/2004/jan/31/gm.food>

²⁶⁴ Syn Bio Watch website: <http://www.synbiowatch.org/captain-hook-awards-2016/?lores>

²⁶⁵ Syn Bio Watch website: <http://www.synbiowatch.org/captain-hook-awards-2016/?lores>

²⁶⁶ Third World Network’s website: <http://www.twn.my/twnintro.htm>

²⁶⁷ *Ibid.*

²⁶⁸ France Libertés: <https://www.france-libertes.org/fr/defendre-les-droits-humains-et-les-biens-communs-du-vivant/>

²⁶⁹ World Weekly: <https://www.theworldweekly.com/reader/view/2464/biopiracy-when-corporations-steal-indigenous-practices-and-patent-them-for-profit>

speech at the French National Assembly and opposed the patent in four points: commercial exploitation, lack of novelty, and the degree of novelty is not enough and the description provided is not clear enough²⁷⁰.

An international organization, which has concerned itself with traditional knowledge and benefit sharing, and particularly relevant for this dissertation, with the implementation of the Nagoya Protocol is Natural Justice: Lawyers for Communities and the Environment. Their engagement concerns mostly human rights issues and environmental law, and they conduct comprehensive researches on those matters; they support indigenous and local communities, since their TK and practices play an important role in the conservation and sustainable use of biodiversity. Their efforts have concentrated also on the promotion of the Nagoya Protocol, since according to them, for the first time an internationally binding legal instrument grants rights to communities over TK and GR²⁷¹. For instance, they have published an interesting report, which provides insights on the legislation provided by the Protocol and on Access and Benefit Sharing (ABS). They also focus on several key initiatives, such as drafting conservation standards to ensure that prior informed consent becomes a priority, as well as community protocols, to raise awareness among indigenous communities of their rights under customary, state and international law. They also provide suggestions on how to relate with third actors, thus external to the community, so as to avoid exploitation²⁷².

Worth mentioning, before concluding, is also the work of Amnesty International. It is a well-known NGO whose focus has been that of promoting and assuring the implementation of human rights all over the world, and in the context of this dissertation it is important to mention their tireless efforts with regard to corporate accountability. As it was already demonstrated, States often lack the capacity to ensure the protection of human rights when it comes to TNCs, either because they lack capacity or they heavily depend on the outputs of the corporations, or at the same time, because of corruption²⁷³. Amnesty's goals are to ensure accountability, prevention, meaning that each corporation should engage in active protection of human rights and prevention of abuses, and remedy, namely ensuring that those people whose rights have been violated by TNCs, can effectively access justice and find remedy for their suffering. Amnesty's contributions have rendered useful and fundamental, for instance in the Ogoniland case. As a matter of fact, back in 2008 in Ogoniland, two oil spills from the Trans-Niger Pipeline owned by Shell destroyed not only the environment, but damaged also thousands of lives. Amnesty partnered with the Centre for

²⁷⁰ G. BOURDY, C. AUBERTIN, V. JULLIAN and E. DEHARO, *Quassia "biopiracy" case and the Nagoya Protocol: A researcher's perspective*, Toulouse, Journal of Ethnopharmacology, Vol. 206, May 27th, 2017, p. 293.

²⁷¹ Natural Justice's website: <http://naturaljustice.org/programme/traditional-knowledge-and-benefit-sharing/>

²⁷² *Ibid*: <http://naturaljustice.org/community-protocols/>

²⁷³ Amnesty International's website: <https://www.amnesty.org/en/what-we-do/corporate-accountability/>

Environment, Human Rights and Development to make sure that Shell “cleaned up its mess and paid proper compensation”²⁷⁴.

It has become increasingly evident, that biopiracy is a complex mechanism that involves more than one actor. The actions of biopirates damage mainly indigenous communities, but they also influence and involve the international system, States and NGOs. Therefore, in such a multi-faced context, the support of these international groups has demonstrated relevant and fundamental in exposing crimes and in raising awareness over an issue, which would have probably passed unnoticed otherwise. The capacity of the NGOs to bring attention to the crime of biopiracy and to help the international system to draft some sort of a mechanism to protect and address the issue, is also worth mentioning. Lastly, the greatest accomplishment of some of these groups, in my very personal opinion, has been that of advocating for communities who usually find it hard to raise their voice to address the injustices they have suffered, either because they are unaware of their rights or because they are compelled to stay silent.

²⁷⁴ Amnesty International’s website: <https://www.amnesty.org/en/what-we-do/corporate-accountability/>

CHAPTER 3: SOURCES OF INTERNATIONAL LAW

1. The absence of Conventions concerning biopiracy

The aim of Chapter 3, dedicated to sources of international law related to the topic, will be that of outlining those legal documents, namely Treaties, Conventions, Protocols and Declarations, which have certain relevance in regard to the fight against biopiracy. Nonetheless, as the title of this particular chapter suggests, there are no Conventions directly aimed at repressing or defining biopiracy. As it was clearly demonstrated in the chapter dedicated to the features of biopiracy, a legal definition of the phenomenon is currently lacking, since the only one, which could have some sort of legal resonance is the one provided by WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore; although, as it was already stated, it is not comprehensive enough, since it does not mention the term “biopiracy” and focuses only on the issue of misappropriation of TK, ruling out GR and patents²⁷⁵. As it should be clear by now, these are constitutive elements of biopiracy and should, consequently, not be forgotten in the drafting of both a definition and a legal document, aimed at repressing biopiracy.

Biopiracy, as the several definitions suggest, involves several elements: traditional knowledge, genetic resources as well as indigenous people, transnational corporations and states. In this sense, with an international system still lacking a proper Convention targeting biopiracy directly, all the regulations regarding the features which constitute it, help in redressing the act itself. As a matter of fact, the following pages will be dedicated to the identification of the existing legal instruments, which deal with two of the most important aspects of biopiracy: TK and GR. Chapter 2 of this section and followings, will deal with both features, since both the Convention on Biological Diversity and the Nagoya Protocol have dedicated several provisions to the protection of traditional knowledge, as well as to the establishment of a system of access and benefit sharing, which all serve to the ultimate goal, namely the conservation and sustainable use of biological diversity²⁷⁶.

Consequently, chapter 3 and followings will be dedicated to a brief analysis of the international patent system, starting from an insight on intellectual property law and industrial property. Afterwards, I will concentrate on the TRIPS agreement, with a focus on a specific article, whose provisions have been questioned as facilitating biopiracy, and on the compatibility or incompatibility between the provisions of the TRIPS and of the CBD. Lastly, chapter 5 will focus on human rights and cultural rights, describing the main international legal instruments protecting cultural rights and the recognition of their connection

²⁷⁵ P. DRAHOS and S. FRANKEL, *Indigenous People's Innovations*, Canberra, Australian National University E Press, 2016, p. 79.

²⁷⁶ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

with human rights, since the aim of this dissertation is that of investigating a particular question, namely, whether if biopiracy can be considered a violation of human rights.

It could be thus stated, that even though the international legal system is lacking a precise Convention targeting biopiracy, the international legal document, which comes nearer to this aim, is the Nagoya Protocol. Indeed M. Y. Teran, who was involved in the negotiations of the Protocol as a representative of the Kichwa Indigenous People, wrote that one of the main purposes of the document is that of stopping biopiracy of traditional knowledge and genetic resources, since it contains provisions dedicated to their protection and regulation. As a matter of fact, the Protocol aims at establishing a well-structured system of access and benefit sharing which, if correctly implemented, is an effective strategy to repress biopiracy²⁷⁷.

Again, even though no Convention has already been drafted, the international community is becoming more and more aware of the issue of biopiracy and of the need to find effective solutions in order to redress these acts concretely and actively. For instance, the United Nations Development Programme wrote in a document dedicated to bioprospecting, that biopiracy could be one of the risks of not implementing correctly ABS systems, as well as the non-ratification of the Nagoya Protocol. The UNDP asked in its report for stronger national and international legal measures as well as enforcement mechanisms to stop biopiracy and thus enabling the correct implementation of bioprospecting. Moreover, it stressed the need for more robust ABS frameworks and more environmental friendly bioprospecting operations, which, altogether, can prevent biopiracy cases from happening²⁷⁸.

The former Director of the Secretariat of the Convention on Biological Diversity, Hamdallah Zedan, wrote a paper in 2005, before the adoption of the Nagoya Protocol, dedicated to biopiracy and patents, and to the search for appropriate legal responses in order to contrast this growing practice. Thus, it can be understood how and why the Nagoya Protocol, which was later adopted, even though without mentioning it directly, is aimed at stopping biopiracy. The Director concluded his paper, by urging the international community to find proper legal responses and a more adequate system, which could deal with the complex intersections between intellectual property rights, biopiracy and related aspects²⁷⁹.

Interestingly, also the European Commission debated over the topic, and more precisely over a specific draft to tackle biopiracy and assure fair compensation for indigenous people providing the knowledge and resources. In a press release of October 2012, the European Commission stressed the urge of becoming a party and ratifying the Nagoya Protocol, in order to tackle biopiracy and facilitate nature-based research.

²⁷⁷ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 16.

²⁷⁸ United Nations Development Programme, *Report: Financing Solutions for Sustainable Development: Bioprospecting*, March 15th, 2016, available at <http://www.undp.org/content/sdfinance/en/home/solutions/bioprospecting.html>

²⁷⁹ H. ZEDAN, *The Search for Appropriate Policy and Legal Responses*, *The Brown Journal of World Affairs*, Vol. XII, Issue 1, Fall 2006, p. 202.

A few days later the EU became a Party to the Protocol as well, and in 2016 the ratification followed²⁸⁰. The debate was strongly encouraged by the Green Party also within the European Parliament, and MEPs were to vote on a report drafted by a MEP of the Green Party, Catherine Grèze, which focused on intellectual property rights related to GR in developing countries. The report also urged the European Union to ratify “*as swiftly as possible*” the Nagoya Protocol as it sets out key provisions to address biopiracy²⁸¹.

Since international legal instruments have not been effective enough so far in redressing biopiracy, some countries, especially developing ones, which are the most affected, have tried to put in place national solutions to deal with the problem on their own. An interesting case is that of India, which created a database called the Traditional Knowledge Digital Library (TKDL), including information regarding millions of medicinal formulations in multiple languages. It is basically a complete database of India’s traditional medical wisdom and thanks to it, the Indian government was able to withdraw and cancel in a period of just two years from its establishment in 2001, 36 patent applications of Indian traditionally known medicinal formulations²⁸². If the international legal system is lacking, States have to try to deal with the problem on their own, although, given the diversity and international stance of actors involved in the process of biopiracy, concerted solutions at the international level could be more effective. Nonetheless, before drawing any conclusions regarding the effectiveness of the legal measures at hand, it might be better to analyse those existing documents, which try, more or less directly, to deal with biopiracy.

²⁸⁰ European Commission website: http://europa.eu/rapid/press-release_IP-12-1063_en.htm

²⁸¹ Green Party Website: <https://www.greens-efa.eu/en/article/news/genetic-resources-and-biopiracy/>

²⁸² WIPO’s website: https://www.wipo.int/export/sites/www/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf

2. Existing instruments concerning genetic resources and traditional knowledge: the Convention on Biological Diversity

The interest towards genetic resources, as it was already stated, is not new to humankind. Genetic and natural resources have been exploited and searched for throughout history, although regulations were late to come, especially with regard to the international sphere. As a matter of fact, the role of GR in international law was clarified only in 1962, through the adoption of UNGA Resolution 1831 (XVII), concerning the “*Economic Development and Conservation of Nature*”. The Resolution makes reference to natural resources, flora and fauna and tries to underline the considerable importance that these resources have for developing countries specifically²⁸³. In those years, the main focus of the international community was the preservation of biological diversity and discouraging threats to the traditional knowledge related to it. Nonetheless, the rapid development of the North, globalization and the exploitation both of TK and GR forced the international community to shift its focus from preservation to utilization, and the contributions of many international organization and UN agencies were decisive.

One of the earliest instruments was provided by the Food and Agricultural Organization (FAO), namely the International Undertaking on Plant Genetic Resources (IUPGRs), which nonetheless defined plant genetic resources as heritage of mankind, therefore considered available for all, without restrictions²⁸⁴. Interestingly, according to Dutfield, it is commonly though erroneously assumed that, due to IUPGRs, biogenetic resources were treated as common heritage of mankind. Nonetheless, since the IUPGRs was not a legally binding agreement, it did not explicitly entail a renunciation of sovereign rights by the States who had signed the Undertaking. The principle became clearly popular amongst developed countries and criticised among the developing ones, who felt their rights limited and their resources exploited²⁸⁵. This particular regime though, stood in place until 2001, when FAO introduced a second treaty, namely the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), which established a regime based on national sovereignty and multilateral cooperation. The need for a revision had been clearly and undoubtedly prompted by the adoption in 1992 of the CBD²⁸⁶. Before the CBD, the World Intellectual Property Organization had adopted another Convention in 1991: the International Convention for the Protection of New Varieties of Plants, which is nonetheless more focused on breeder’s rights.

²⁸³ United Nations General Assembly, Resolution 1831 (XVII) *Economic Development and the Conservation of Nature*, New York, December 18th, 1962, available at

<https://documents-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/193/39/IMG/NR019339.pdf?OpenElement>

²⁸⁴ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 10.

²⁸⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 10.

²⁸⁶ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 11.

The United Nations Convention on Biological Diversity was born out of the need to regulate the utilization of the Earth's resources, which have been recognised a tremendous value over the years, both culturally and economically, as a global asset. Therefore, in 1989 the UNEP, United Nations Environmental Programme issued the Ad Hoc Working Group of Technical and Legal Experts, which became known as the Intergovernmental Negotiating Committee, to draft an international legal document aiming at the conservation and most importantly, sustainable use of biological diversity²⁸⁷. Clearly, the negotiating process was not easy and free from impasses, given the two strong positions which approached the negotiation table: the North, led mostly by the United States, had set its agenda on two main objectives. First of all, to leave out of the Convention the access to genetic resources, so as to continue to have free access to the South's GR, which could be described more as a "hidden agenda", although with a primary role; secondly, to conserve wildlife and its habitats²⁸⁸.

With regard to the South on the other hand, their agenda was set mainly on three objectives: equal access to information and biotechnology, inclusion of all biodiversity within the protection of the Convention and lastly, regulation of the use of biodiversity and conservation. The latter in particular was of specific importance, since developing countries, usually the owners of GRs, wanted the North to share both responsibility and the costs of conservation, which could not be born by the owners alone²⁸⁹. States, which originally participated in a number of 25, did not compose the negotiation table alone since also NGOs were involved as observers, such as for example the World Wide Fund for Nature (WWF) and the IUCN, World Conservation Union. Nonetheless, the number of delegates involved grew rapidly and within only one year, the seven formal working sessions saw the number of participants grow from 25 to 80. A great absence from the negotiation table worth mentioning in my opinion, is that of RAFI, which decided not to be involved due to the mistrust that the results could actually be advantageous for indigenous communities and GR owners, and preferred nonetheless to participate and lobby in the TRIPS negotiations²⁹⁰.

The CBD was finally adopted at the Earth Summit in Rio de Janeiro on June 5th, 1992, during the UN Conference on Environment and Development, signed by 153 States including the European Community. It entered into force on December 29th, 1993, when it reached the 30 ratifications prescribed by the Convention itself. To this day, the Convention has 196 Members Parties, with one great absent: the United States of America, which after the signature in 1992 did not ratify the Convention²⁹¹. Should this be considered as a proof of the fact that the negotiations did not meet the USA agenda? In order to understand this, it is important to contemplate the output of the negotiating process.

²⁸⁷ CBD website: <https://www.cbd.int/history/>

²⁸⁸ G. K. ROSENDAL, *The Convention on Biological Diversity and Developing Countries*, 1st edition, Dordrecht, Kluwer Academic Publishers, 2000, p. 92.

²⁸⁹ *Ibid.* p. 93.

²⁹⁰ *Ibid.*

²⁹¹ CBD website: <https://www.cbd.int/information/parties.shtml>

The main objectives of the CBD are: conservation of biological diversity, sustainable use of its components, fair and equitable benefit sharing related to the use of said resources. As it was already stated, developed countries were mostly trying to achieve: biodiversity conservation, maintenance of the common heritage of mankind principle intended as free access to and for all, and to avoid that intellectual property rights over biotechnology products would be hindered by the Convention. On the other hand, developing countries focused more on sustainable utilisation and equitable sharing, to maintain the common heritage of mankind principle in the sense that genetic resources should be considered as a benefit for all humankind, and lastly, to regulate the IPR system with regard to TK and GR, which was being finalised in those same years during the Uruguay Round²⁹².

As it can be seen from the objectives, both the North and South saw some of their interests met, and in order to overcome the impasse related to the common heritage of mankind principle, signatories found consensus over the recognition of national sovereignty as the leading principle, namely that States had sovereign rights over their biological and genetic resources, and can regulate access according to the provisions of the Convention, and grant their preservation and sustainable use. The CBD is thus an example of a negotiation process, which was able to meet both the requests of developed and developing countries²⁹³.

Although it might be extremely interesting to linger over the negotiation strategies, whether if the North approached the negotiation table through hard bargaining, and whether if the South was able to form a group to increase their bargaining power, it would take too many pages with the risk of falling out of topic. Therefore, I would like to engage in the analysis of the CBD, by starting from its principles. A very important foundation lies in its Preamble, namely that even though biodiversity is a “*common concern of humankind*”²⁹⁴, the principles of national-sovereignty and non-intervention, are core values of the Convention, declared in Article 3 of the CBD. As a matter of fact, the Preamble of the CBD affirms that each State has sovereign rights over their own biological resources. Nonetheless, having underlined the fact that biodiversity is a matter of interest for the whole international community, means that States do not have an absolute right over their resources²⁹⁵. Moreover, the Preamble recognises the close relationship and dependence that indigenous communities have with their own resources, as well as the need for equitable benefit sharing from the use of both their resources and traditional knowledge: their

²⁹² G. K. ROSENDAL, *The Convention on Biological Diversity and Developing Countries*, 1st edition, Dordrecht, Kluwer Academic Publishers, 2000, p. 105.

²⁹³ A. L. HARVEY and N. GERICKE, *Bioprospecting: Creating a Value for Biodiversity*, ResearchGate, October 2011, p. 323, available at <https://www.researchgate.net/publication/221918042>

²⁹⁴ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

²⁹⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004.

role will be restated in Art. 8 of the Convention. Furthermore, the Preamble also recognises the peculiar role that women play with regard to conservation and sustainable use²⁹⁶.

The objectives of the Convention are declared in Art. 1, which need to be achieved in accordance with the provisions indicated within the CBD, and they include: conservation of biological diversity, sustainable use of its components and fair and equitable benefit sharing arising from the use of said resources, including access to resources and a guarantee of the rights of the owners²⁹⁷. According to Dutfield, the objectives of the Convention delineate two sets of rights related to genetic resources. First of all, the Convention allows for specific rights that can be applied to genetic resources per se, concerning mostly the countries owners of GR, while a second set of rights refers to the technologies developed over or thanks to those resources²⁹⁸. Clearly, these rights are directed mostly at targeting corporations' and developed countries' interests over biotechnology. According to the author, the Convention reveals a third dimension of rights, converging with the two abovementioned, which concerns the rights of the traditional communities who safeguard both GR and the traditional knowledge associated to it²⁹⁹.

Article 2 provides definitions, which are relevant for the Convention, for example, it underlines that biological diversity refers to the variability amongst, within and between species and ecosystems, while biological resources entail genetic resources, organisms, populations or any other biotic component which is valuable for humankind³⁰⁰. Article 6 concerns the measures for conservation and sustainable use, calling for strategies, plans and programs to ensure these aspects, which have to be implemented at national level. According to Dutfield and Posey, although it is not precisely outlined within the article, indigenous people should play a central role in developing strategies and plans for conservation and sustainable use, based on their own knowledge and value systems³⁰¹. Article 7 concerns identification and monitoring, processes in which indigenous people should be again involved by proposing and developing criteria, although again this is not explicitly stated in the Convention.

Article 8 deserves a little more detailed attention and analysis, as it is, apart from the Preamble, the only article, which specifically mentions indigenous people. The article deals with in-situ conservation and establishes, from letter (a) to (m) a series of strategies to assure conservations, such as: establishing protected areas, regulating the management of genetic resources, protecting ecosystems and habitats,

²⁹⁶ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 2.

²⁹⁷ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

²⁹⁸ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 78.

²⁹⁹ *Ibid.* p. 79.

³⁰⁰ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³⁰¹ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 104.

promoting environmental-friendly and sustainable development and so forth³⁰². By paragraph (j), the Convention establishes that every contracting State shall:

“Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices³⁰³”

Article 8(j) clearly encourages support of indigenous communities, as it recognises their significant contribution to the conservation and sustainable use of genetic resources. As a matter of fact, States parties should establish instruments aimed at protecting the rights of indigenous people, and they should also put in place mechanisms allowing equitable benefit sharing³⁰⁴. Darrell and Posey assert that, in order to ensure effective implementation of the provisions by Art. 8, the following measures should be enacted: indigenous land demarcation and guarantees of security, promotion and support for indigenous-based conservation systems and sustainable use, support to indigenous organizations and lastly, the creation of enforceable legal structures to ensure the effective application of equitable benefit sharing regimes³⁰⁵. Interestingly, and especially related to this article, is the fact that through the Conference of the Parties (COP), a Working Group has been established, namely WG8J, or the Working Group on Article 8(j) and related provisions. Through this Working Group, indigenous people were able to promote their views, perspectives and interests: the focus of the WG8J has been especially that of developing plans for the preservation of traditional knowledge, innovation and practices associated to indigenous people. Adopted in 2000, the plans have been the main instrument that the COP has had to achieve the commitments set out in Article 8(J), and an effective demonstration of the crucial role of indigenous communities in this regard³⁰⁶.

Article 10, which targets aspects related to sustainable use, does not precisely mention indigenous people, though it does refer to “local populations” and “traditional cultural practices”³⁰⁷. The provision regarding

³⁰² United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³⁰³ *Ibid.*

³⁰⁴ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 82.

³⁰⁵ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 105.

³⁰⁶ United Nations Economic and Social Council, Department of Economic and Social Affairs, *State of the World's Indigenous People*, ST/ESA/328, New York, United Nations Publication, 2009, p. 104.

³⁰⁷ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

traditional practices states that contracting parties shall protect and encourage “customary use” of biological diversity by taking into consideration cultural practices based on sustainable use. Dutfield and Posey on the other hand have expressed some critics over the unclear wording of the provision regarding local populations, which states that contracting parties shall support the local communities involved, by asserting that there is no clear meaning with regard to what support actually means in terms of State’s commitments, therefore indigenous people should develop their own guidelines³⁰⁸. Articles from 11 to 13 call for incentive measures to finance research, training, education and awareness raising. Article 14 deals with impact assessment and declares that contracting parties shall conduct environmental impact assessments with regard to the projects that they propose, which might have a negative or significant impact on biological diversity³⁰⁹.

Article 15 deserves a little in depth analysis, as it deals with access to genetic resources. Interestingly, at paragraph 1, the article reassures the principle of national sovereignty declared at the beginning, by affirming that States have the authority to determine access to their genetic resources according to their national legislation³¹⁰. One of the critics that the CBD has been addressed refers precisely to this paragraph, namely that States are the ultimate decision-makers with regard to access to genetic resources, even though the actual owners are indigenous communities and not States themselves. Many advocates of indigenous communities have agreed that the rights of indigenous communities over their resources have been marginalized by the CBD, since States are the only recognised entities with authority over GR. It is true that indigenous communities have been recognised by article 8(j) to possess TK related to GR, but they are not, from a legal perspective, owners or have any recognised right over GR under the CBD³¹¹. Article 15.2 indicates that access to GR for environmentally sustainable use should be facilitated and that no restriction shall be imposed, contravening to the objective of the Convention. Paragraphs 4 and 5 affirm that access shall be based on mutually agreed terms and shall be subject to prior informed consent, although it adds “unless otherwise determined by the Party”³¹², which seems to suggest that if parties do not convene that prior informed consent is necessary, it can be avoided. Paragraphs 6 and 7, state that source countries are expected to collaborate actively in research programmes concerning their biodiversity, and that the results of researches and commercial benefits arising from the use of GR should be equally shared upon mutually agreed terms³¹³.

³⁰⁸ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 105.

³⁰⁹ *Ibid.*

³¹⁰ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³¹¹ D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 100 in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

³¹² United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³¹³ A. L. HARVEY and N. GERICKE, *Bioprospecting: Creating a Value for Biodiversity*, ResearchGate, October 2011, p. 324, available at <https://www.researchgate.net/publication/221918042>

Article 16 is worth mentioning, as it deals with “access to and transfer of technology”. According to Dutfield and Posey, even though the article does not specifically mention indigenous technology, since Article 18.4 affirms that States shall “*encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention.*”³¹⁴, the transfer of technology mentioned by Article 16 clearly covers also indigenous technology. Therefore, in some ways, this article is one of the most relevant for indigenous people, as it specifically provides for national and legislative administration, as well as adequate policies and measures to ensure the respect of intellectual property rights, and they must include indigenous and traditional technologies as well³¹⁵.

Article 17 encourages exchange of information, also referring to indigenous and traditional knowledge. This might be considered a threat to indigenous knowledge, but the provisions of Article 8(j) declare that TK has to be preserved and maintained, thus the sharing of information related to this aspect should be carried out in compliance with the provisions of the Convention. Article 18 calls for the promotion of scientific and technical cooperation, as well as for the establishment of a clearing-house mechanism to achieve this objective³¹⁶. Article 19 covers the distribution of benefits of biotechnology, while Article 20 enumerates the financial resources and Art. 21 describes the financial mechanism. From Article 22 to 27 a series of provisions regarding the Convention itself are enlisted: the creation of the COP, the Secretariat, the Subsidiary Body on Scientific, Technical and Technological Advice and the settlement of disputes. Articles from 28 to 30 concern the adoption of protocols, amendments to the protocols and annexes, while Article 31 outlines the right to vote with regard to the Convention. Lastly, the final articles address signature and ratification, entry into force, reservations and withdrawals³¹⁷.

Once that the most significant provisions of the CBD have been outlined, which are relevant for this dissertation, I would try to summarize the most important features. As it was already stated at the beginning of the chapter, the Convention was the result of compromises between developed and developing countries, which were trying to have the best possible outcome for themselves respectively during the negotiation process. The role of indigenous people in this process has been crucial, and the result of the ever-growing importance that their advocacy has achieved in the last decades, though their interests and perspectives with regard to the CBD, have been ensured more effectively through the Working Group on Article 8(j)³¹⁸. The means that the CBD provides to indigenous communities are,

³¹⁴ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³¹⁵ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 107.

³¹⁶ *Ibid.*

³¹⁷ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

³¹⁸ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 158.

although they are not recognised as the ultimate authority with regard to GR: prior informed consent, equitable benefit sharing and protection of TK. The CBD is not the only legally binding international agreement that covers TK, as it also falls under the regulation of the intellectual property regime. In the next chapters, after having outlined the additional instruments reinforcing the provisions of the CBD, namely the Bonn Guidelines and the Nagoya Protocol, I will try to outline the IP regime and then address the possible incompatibility between the two main legal instruments covering TK: the CBD and the TRIPS.

2.1 The Bonn Guidelines

The adoption of the Convention on Biological Diversity was well received, although some States had their doubts on some issues: for instance, developed countries and especially the United States feared that the intellectual property regime could be undermined, while advocates of indigenous' rights had some reservations regarding the provision which defined States as those owing genetic resources. The CBD had established, by Article 23, the Conference of the Parties and outlined its mandate: ensuring the implementation of the Convention, and compiling policy information related to access to GR and benefit sharing³¹⁹.

The COP met every two years from the adoption of the CBD, with only one extraordinary session in Cartagena in 1999: during COP-4, a Panel of Experts on Access and Benefit Sharing was established, composed from public and private sector experts, as well as advocates for indigenous people, to develop guiding principles and codes of best practices. In 2000, the Panel increased its members from 50 to 60 experts, and it developed a more detailed agenda. Moreover, COP-5 issued a Working Group on Access and Benefit Sharing, which included government-representatives, NGOs and indigenous communities representatives as well: its mandate was even more specific than that of the panel, as it was to develop guidelines on which to base policy measures and contractual agreements under mutually agreed terms related to access and benefit sharing³²⁰.

In 2001 the Working Group met in Bonn to discuss the proposal submitted by the Swiss Government, NGOs and Universities concerning guidelines ranging from collecting GR to the commercialization of scientific researches. The negotiations of the Bonn Guidelines involved an interesting variety of actors: governments, NGOs and international organizations, industries and research groups, as well as a variety on interests and perspectives at stake: during the negotiations, one of the main positions which had to be fought, was the idea held by industries that benefit sharing referred mainly to non-monetary revenues³²¹. Interestingly though, according to Harry and Kanehe, the vast majority of indigenous people who had been involved in the negotiation process of the guidelines, were not able to direct the outcome in their favour and saw it as favouring biopiracy of their own resources. Therefore, they decided to withdraw from actively participating in the negotiations and later rejected the implementation of the guidelines.

At the sixth COP held in The Hague in 2002, the Parties adopted the voluntary-based Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, a non-legally binding instrument aimed at developing an international regime on access and

³¹⁹ S. TULLY, *The Bonn Guidelines on Access to Genetic Resources and Benefit Sharing*, Review of European, Comparative & International Environmental Law, Vol. 12 (1), Oxford, Blackwell Publishing Ltd., 2003, p. 84.

³²⁰ *Ibid.* p. 85.

³²¹ *Ibid.*

benefit sharing³²². Notwithstanding the withdrawal of indigenous communities, the guidelines were unanimously adopted by 180 countries, thus demonstrating the willingness of States to tackle such complex issues³²³.

The aims of the Guidelines are mainly twofold: to guide and assist countries in creating and implementing national, legislative administrative or policy measures related to access and benefit sharing, and secondly, providing assistance in the negotiation of mutually agreed terms and benefit sharing agreements, aimed at increasing the share of benefits of countries rich in biodiversity. As a non-binding agreement, the Bonn Guidelines constitute soft law as they portray the commitment and willingness of the State Parties to implement the more explicit provisions of the CBD, which is a hard law or binding example. They do demonstrate the willingness to create a clear and easier path for the Parties to implement the binding regulation of the CBD, since the wording of the Convention has been in some occasion defined too vague³²⁴.

The first paragraph of the Bonn Guidelines states their main purpose, which is to provide a path for the drafting of legislative, administrative and policy measures particularly regarding specific provisions of the CBD: those outlined by Articles 8(j), 10(c), 15, 16 and 19. The following paragraphs restate the non-legally binding nature of the document, which is not intended to substitute either the provisions of the CBD or of national legislation. The specific and detailed objectives of the guidelines though, are outlined under paragraph E, for instance: contributing to conservation and sustainable use of biodiversity, to assist Parties and inform stakeholders, to provide capacity-building to guarantee adequate implementation of access and benefit sharing, to raising awareness over the CBD, to give a significant contribution to poverty alleviation, and so forth³²⁵.

The guidelines are then divided into sections: starting from roles and responsibilities, where national authorities and duties are described, moving to stakeholder's participation, to outlining the steps to undertake when engaging in access and benefit sharing processes. Interestingly, this section dedicates some paragraphs to features regarding benefits, and precisely on the types of benefits, which shall be both monetary and non-monetary and should be fairly and equitably shared, based on prior informed consent and mutually agreed terms³²⁶. The fifth part is dedicated to other provisions, such as incentives, accountability in access and benefit sharing, national monitoring and reporting, means of verification,

³²² D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 91 in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

³²³ United Nations Environmental Programme, Secretariat of the Convention on Biological Diversity, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, Montreal, 2002, available at <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf>

³²⁴ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 139.

³²⁵ United Nations Environmental Programme, Secretariat of the Convention on Biological Diversity, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, Montreal, 2002, available at <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf>

³²⁶ *Ibid.*

settlement of disputes and remedies. The Bonn Guidelines then conclude with two Appendixes, one referring to suggested elements for material transfer, and the second one describing what constitutes monetary and non-monetary benefits³²⁷.

The purpose of illustrating the elements of the Bonn Guidelines, and more precisely the negotiation process and reasons for its adoption, has been that of portraying the willingness of Parties to comply adequately with the provisions of the Convention on Biological Diversity. Although, at this point, a question might fairly arise: how is it possible, that with such an enthusiasm to engage fairly in the use of natural resources, accounts on biopiracy are growing and becoming more and more recognised? Maybe a sign of warning can be recognised in the fact that many indigenous communities have rejected the guidelines, but not the Convention itself. Still, since biopiracy has been defined as a recent phenomenon, it could be stated, that the provisions of the CBD and the guidelines have not been sufficient in restraining the phenomenon. The following chapter will deal with an additional Protocol of the CBD, namely the Nagoya Protocol, which demonstrates the need for further and more in depth regulations.

³²⁷ United Nations Environmental Programme, Secretariat of the Convention on Biological Diversity, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, Montreal, 2002, available at <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf>

2.2 The Nagoya Protocol

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity is an additional protocol to the Convention on Biological Diversity, adopted through decision X/1, at the tenth COP meeting held in Nagoya from the 18th to the 29th October 2010. The Parties asked the UN Secretary General to be the Depositary for the Protocol, and signature was opened for one year, from February 2011 to February 2012³²⁸. The adoption of this additional Protocol reiterates that the Bonn Guidelines have not been an effective means to further regulations regarding access and benefit sharing. Contrary to the Guidelines negotiation, indigenous people advocates and representative groups were quite active during the discussions concerning the adoption of the additional Protocol, as it was undoubtedly going to affect them more: as a matter of fact, the purpose of the Protocol was to be the implementation of the third objective of the CBD, namely access and benefit arising from the utilisation of genetic resources³²⁹.

In September 2002, only a few months after the adoption of the Bonn Guidelines, the World Summit on Sustainable Development was held in Johannesburg, and during that conference States expressed the need for an international regime within the boundaries of the CBD, aimed at addressing the sharing and access to genetic resources among stakeholders³³⁰. Therefore, during the seventh COP meeting in 2004, the Parties made a threefold decision: to establish an Ad Hoc Open-Ended Working Group on Access and Benefit Sharing (ABS), to negotiate an ABS international regime and to further the implementation Article 8(J) of the CBD³³¹. The negotiations began with the adoption of this decision and, as it was already stated, indigenous people were particularly active in the negotiation process. Several advocate groups took part in the discussions, such as for example the International Indigenous Forum on Biodiversity and Indigenous Women's Network on Biodiversity.

Once again, the perspectives and aims of developed and developing countries were divergent. Southern countries perceived themselves more as provider countries with regard to genetic resources and wanted to enhance their rights on the matter, while Northern countries were considered more as users and were thus hoping to settle for a non-legally binding protocol³³². The main issues debated during the six years of negotiations were: whether to render the agreement a legally binding instrument, or a document based on voluntary commitment, access to benefit sharing of genetic resources and the traditional knowledge associated to it, as well as the involvement of indigenous people in benefit sharing when the knowledge

³²⁸ <https://www.cbd.int/abs/background/default.shtml#adoption>

³²⁹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, The International Indigenous Policy Journal, Vol. 7, Issue 2, April 2016, p. 4.

³³⁰ E. MORGERA, E. TSIOUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 20, available at <https://brill.com/view/title/20824>

³³¹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, The International Indigenous Policy Journal, Vol. 7, Issue 2, April 2016, p. 4.

³³² *Ibid.*

involved is their own, establishing objectives to facilitate and guarantee access to GR, mutually agreed terms, prior informed consent and disclosure of origins when requesting for a patent³³³.

Indigenous people were able to successfully lobby in order to achieve their goals, by developing a series of strategies and by working closely as a united block, which involved indigenous people representatives but also governments who cared for their interests, as well as by networking and raising awareness of their issues not only amongst indigenous people but worldwide. They tried to make clear recommendations and raised several concerns, in the event that an agreement was not to be reached³³⁴. Moreover, one of their main concerns was to avoid confusion regarding traditional knowledge and terms like genetic resources: for instance, a representative of the Indigenous Women's Network on Biodiversity tried to explain what a genetic resource is, but most importantly how, every natural resource has the potential for commercial exploitation and how the revenues and benefits remain in the hands of transnational corporations or pharmaceutical companies, without being shared with indigenous communities, who are in fact the guardians of the GR and keepers of the TK needed to develop the products³³⁵. Another example concerns the International Indigenous Forum on Biodiversity, which worked hard to make clear the intrinsic connection between TK and GR, and therefore that indigenous rights over those fundamental elements were to be recognised and protected. Furthermore, they asked for the recognition of human rights related to land, territories as well as to traditional knowledge³³⁶.

At the end of the six years of negotiations, the Protocol included: regulations regarding access to GR, fair and equitable benefit sharing and obligations of compliance such as prior informed consent and mutually agreed terms, monitoring systems of GR use and the establishment of a certificate of compliance internationally recognised. Moreover, several paragraphs within the Preamble and articles of the Protocol specifically deal with indigenous people and traditional knowledge, even though some critics have stated that the very purpose of the Protocol is contradictory to the way of living of indigenous people, since it tackles complex technology and commerce. Indigenous communities see the Earth as a mother which provides resources but that has to be cared for and respect, while Western countries look at the Earth more as a means to exploit. Notwithstanding these observations, the Protocol was well received among indigenous people³³⁷.

The aim of the Nagoya Protocol is to ensure the sharing of benefits and TK related to the use of GR in a fair and equitable way, by regulating access to GR and the transfer of relevant technologies. It also ensures the protection of TK and GR, and the conservation of biological diversity and sustainable use, which are the main aims of the CBD, under which the Protocol was adopted. For the first time, and

³³³ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 6.

³³⁴ *Ibid.* p. 9.

³³⁵ *Ibid.*

³³⁶ *Ibid.*

³³⁷ *Ibid.* p. 16.

contrary to its predecessors, the Protocol provides legally binding rules on compliance with regard to access and benefit sharing (ABS): these international obligations involve both the provider and the recipient or user countries³³⁸. For the first time, internationally binding obligations arise when traditional knowledge is used, in the form of benefit sharing. “*Unraveling the Nagoya Protocol*” provides the perfect example of how, ideally, an ABS system should work, which is important to keep in mind:

“A European research team working for the food industry, wishes to conduct research on a wild African plant with high nutritional value to further advance the development of a functional food. In this ideal case, both the African (provider country) and the European country in question (user country) have national legislation in place clearly setting out, among others, conditions for access, including the authority to grant PIC, modalities for the negotiation of specific benefit-sharing arrangements through the establishment of MAT, and a framework that supports the reporting and tracking of ABS-related obligations. The European research team contacts the provider country’s national authority in order to request a research permit. Following negotiations, where both sides are equally aware of their rights and obligations, MAT for fair and equitable benefit-sharing are established, including for instance the participation of African researchers in the research team (non-monetary benefit-sharing) and a percentage of royalties in case of commercialization of a product based on the use of the plant provided (monetary benefit-sharing). The European team conducts its research, develops a highly successful functional food [...] in full compliance with MAT. Benefits flow back to the African country and are consistently used for the conservation and sustainable use of the plant in question, as well as to improve the livelihoods of local communities [...].³³⁹”

Of course, the Protocol will not assure that such example became reality, as several variables do not depend from its provisions, but, for instance, from States’ national legislation, their capacity to comply with the provisions, or for example, there can be the case of users who decide to proceed without requesting prior informed consent (PIC), to name a few³⁴⁰.

I will now delve into the analysis of the Protocol, by focusing on those provisions, which are more relevant for the purpose of this dissertation. Article 1 indicates the objectives of the Protocol, and establishes links with the CBD: as it was already stated, and as underlined by this first article, its essential goal is to share the benefits arising from the utilization of GR. The article also expresses three means to accomplish said objective: access to GR, technological transfer and funding, while also acknowledging the link with the other two main objectives of the CBD: conservation of biodiversity and sustainable use.

³³⁸ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 24, available at <https://brill.com/view/title/20824>

³³⁹ *Ibid.* p. 18.

³⁴⁰ *Ibid.* p. 18-19.

Interestingly, Article 1 makes no reference to traditional knowledge and indigenous people, which have nonetheless been recognised as key elements of the Protocol³⁴¹.

According to Morgera, Tsioumani and Buck, fairness and equity are two critical features of ABS regimes in international law, and they can be interpreted as follows: fairness refers both to the need for legitimacy concerning the creation and consequent application of rules, as well as to the need for equity and justice, referring to the expectations of the participants for equal and justifiable distribution of costs and benefits³⁴². Moreover, according to these three authors, even though the first article does not mention expressively TK, it can be asserted nonetheless that benefit sharing related to the use of TK associated with GR can be ruled within the objective of the Protocol, since the aims of a treaty can be deduced also from significant provisions and the preamble, which in this context makes clear references to TK and indigenous people³⁴³.

As a matter of fact, the preamble of the Protocol recalls the relevance of *article 8(j)* of the CBD and reasserts the fundamental relationship between TK, GR and indigenous communities, as well as the role that TK plays in the conservation of biodiversity. Interestingly, the preamble also notices the “diversity of circumstances” in which TK is held or owned and that it is an essential right of indigenous people to identify the rightful holders of said knowledge. Lastly, it recalls the several forms in which TK can present itself and how it contributes to the richness of a country’s cultural heritage³⁴⁴.

Article 2 is also particularly important, since it concerns with the use of terms: in particular, the Protocol provides the definition for “utilization of genetic resources”. During the negotiation process, the Parties tried to enumerate a list of activities, which could fall under the category of utilization, but eventually opted for a broad and general definition covering for several uses and the growing development of biotechnologies, which are also covered by the article at paragraph d³⁴⁵. With regard to the utilization of GR, the interesting aspect of the article is that it focuses on the intent of utilization, namely research and development. Indeed the article states that utilization refers to conducting research and development on either the biochemical or genetic aspect of GR. Interestingly, by connecting this article with Article 8 of the Protocol, according to Morgera, Tsioumani and Buck, the document draws a clear distinction between research carried out for commercial and non-commercial purposes, since Art. 8 establishes a general

³⁴¹ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 48, available at <https://brill.com/view/title/20824>

³⁴² E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 50, available at <https://brill.com/view/title/20824>

³⁴³ *Ibid.* p. 53.

³⁴⁴ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

³⁴⁵ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 62-63, available at <https://brill.com/view/title/20824>

obligation for the States Parties to the CBD, to create favourable conditions for research aimed at enhancing the conservation and sustainable use of biodiversity. Even though Art. 8 does not state precisely which conditions are to be considered favourable, it addresses non commercial-research, emergency cases related to human, animal and plant health as well as GR for food and agriculture³⁴⁶.

Basically, the article is proposing examples of conditions that could promote and encourage research, and identifies one of them in measures on access for non-commercial research purposes. It could be thus stated, that the Parties of the Protocol have recognised that when research becomes entangled with profits and commercial purposes, risks are in ambush. Even though the article does not mention precisely what commercial and non-commercial means are, in 2008 the group of experts on research on the non-commercial sector met in Bonn to draw the lines between commercial and non-commercial research, and identified the latter as “designed to produce at least some results and benefits that will have real or potential commercial value and creates benefits that are held privately rather than entered into the public domain and are restricted in different forms”³⁴⁷. While, on the contrary, commercial research lacks the criteria identified for the non-commercial one and is usually aimed at displaying its results publicly³⁴⁸. Clearly, the Parties to the Protocol had felt the need to address commercial and non-commercial activities more in depth than the CBD had, as they undoubtedly play a fundamental role in access and benefit sharing. Unfortunately, Article 2 on the use of terms does not mention traditional knowledge or its utilization, although according to many scholars and authors, the use of TK should be interpreted under several elements: the related provisions of the Protocol, international human rights law and indigenous customary laws and protocols accordingly³⁴⁹.

Article 3 declares the scope of the Protocol: interestingly, this provisions fills in the lacks of the previous article, by stating that the Protocol shall apply also to the traditional knowledge associated to GR, and that benefits arising from its utilization are to be shared. Clearly, this particular provision has to be understood in accordance with Article 8(J) of the CBD, as well as to several following provisions of the Protocol itself, namely Articles 5, 6, 7 and 12³⁵⁰. During the negotiations, the scope had been debated at length, focusing especially on two issues: whether to include a more broad or limited scope and the temporal scope. With the regard to the first issue, the compromise was achieved through a simplification of the

³⁴⁶ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 117.

³⁴⁷ *Ibid.* p. 120.

³⁴⁸ *Ibid.*

³⁴⁹ E. MORGERA, E. TSIΟΥMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 74, available at <https://brill.com/view/title/20824>

³⁵⁰ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 69.

scope and by addressing scope-related issues in the following articles³⁵¹. With regard to the temporal scope, negotiations eventually did not come to a solution to overcome the impasse, and no mention to the temporal scope was included in the Protocol. Therefore, the Protocol follows the norms of international law provided by the Vienna Convention on the Law of Treaties, stating that no Treaty shall be applied retroactively, unless chosen by the Parties to the Treaty. Since no specific mention was made, the Protocol applies only to GR and TK acquired after the entry into force of the Nagoya Protocol³⁵².

Article 5 deals with fair and equitable benefit-sharing and it is strictly connected with the Annex on monetary and non-monetary benefits. It sets three precise obligations that States have to carry out through a more severe language than the previous provisions and the CBD: the first obligation refers to the sharing of benefits with the country of origin of the GR and TK, the second is linked with indigenous communities, as States must share benefits with the communities providing the GR, while the third obligation refers to sharing the benefits arising from the utilisation of TK always with indigenous communities, holders of such knowledge³⁵³. This article holds an indispensable role, since for the first time it specifically mentions indigenous people and the importance of sharing benefits with them, not only arising from the use of GR but also of TK, thus indirectly recognises the connection and relation between these elements and indigenous communities, thus enhancing huge innovations from the CBD³⁵⁴. As Morgera, Tsioumani and Buck state:

“The ground-breaking nature of Article 5(2) should be highlighted from the outset: for the first time in international environmental law, a treaty creates an obligation for States to establish measures to reward indigenous and local communities responsible for the stewardship of genetic resources and their resulting contribution to scientific progress for the benefit of the global community. Article 5(2) in fact goes significantly beyond the CBD [...]”³⁵⁵.

As a matter of fact, the CBD under *article 8(j)* had only required Parties to encourage the sharing of benefits when TK associated with GR was involved, but without any particular reference to compulsion or to indigenous communities. The Protocol reinforces its language and turns the provision into an imperative. Again though, no clear definition of the utilization of TK is portrayed, but the Annex to the

³⁵¹ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 69.

³⁵² *Ibid.* p. 72.

³⁵³ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 112, available at <https://brill.com/view/title/20824>

³⁵⁴ *Ibid.* p. 112-113.

³⁵⁵ *Ibid.* p. 117.

article provides a complete (almost unchanged from the CBD) list of monetary and non-monetary benefits, which both are to be shared³⁵⁶.

Another article, which represents a major innovation in reference to the CBD is the following one, namely Article 6, and for several reasons. It deals with access to GR, which is one of the pillars of the Protocol itself and considered as a fundamental precondition enabling a fair and equitable benefit sharing system, although it avoids providing a definition of access to GR. This article stems from the compromise between the two main groups involved in the negotiation process, namely developed and developing countries. As it was already stated, developed countries figured themselves more as users, while developing countries considered themselves more as provider countries³⁵⁷.

In paragraph 1, the article restates the principle of national sovereignty over national resources and GR and that both access and benefit-sharing shall follow domestic legislation, while introducing an important element, which is prior informed consent (PIC). This concept originated in the 1980s within the framework of the FAO in regard to the use of pesticides, and it entailed that before engaging in a risky activity, both those affected by the consequences of said activity and those who made the decision, had to be informed before about the potential risks, to make a conscious and informed decision, hence, prior informed consent³⁵⁸. The CBD actually mentioned PIC, although conceived differently from the Protocol. Under the Nagoya Protocol, PIC is a mandatory requirement in order for the providing State to grant access, although the paragraph does declare: “*unless otherwise determined by the state*”³⁵⁹, meaning that a State can decide autonomously whether if to ask for the issuance of a PIC or not, or to ask for it for particular cases and so forth.

The second main novelty that Article 6 proposes compared to the CBD can be identified in paragraph 2. Even though paragraph 1 restated the principle of national sovereignty, and even though the provisions of the CBD determined States as the actual owners of genetic resources, this particular paragraph states:

“In accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that the prior informed consent or approval and involvement of indigenous and local

³⁵⁶ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 88.

³⁵⁷ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 137, available at <https://brill.com/view/title/20824>

³⁵⁸ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 95.

³⁵⁹ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

communities is obtained for access to genetic resources where they have the established right to grant access to such resources”³⁶⁰.

This paragraph displays a huge development in regard to the previous international documents, as it specifically and explicitly asks for regulations for access to those resources held by indigenous communities, namely where communities “*have the established right*” over said resources. Clearly, the document does not recognise for indigenous people, the right to grant access to GR within their territories, but it does ask Parties to put in place legislations following the PIC provision when indigenous communities have been recognised the holders of GR. The mandatory wording of the article leaves little or no doubt at all in this regard, in the sense that States must establish PIC measures and mechanisms to ensure that indigenous people are correctly and fully informed. Clearly, this provision does limit the previous one, under paragraph 1, stating that Parties could decide whether or not to require PIC, as in the case of indigenous communities it is mandatory³⁶¹.

Lastly, paragraph 3 indicates a list of standards or minimum requirements that Parties shall respect when establishing domestic and administrative measures enabling access to GR. Interestingly, the first legal standard required for access to GR is certainty, clarity and transparency. Legal certainty is an international law principle aimed at ensuring that the subjects to such law can regulate their behaviour accordingly and with clarity, and that at the same time it refrains States from abuses of power. Legal clarity entails that the law should be sufficiently precise and not contradictory, while legal transparency asks for a system of law, which is free and accessible to all³⁶². The second standard aims at protecting the user countries against unreasonable or unjustified discretion by the providing State, by asking for a fair and non-arbitrary access system. This is a further proof of the fact that this Protocol was the result of fruitful compromise between developed and developing countries, aimed at safeguarding the interests of both. Finally, the following standards list all the requirements, which have to established at the domestic level for Parties requiring PIC, such as for example indicating the national authority competent in granting PIC, which requirements PIC should portray, and so forth³⁶³.

³⁶⁰ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

³⁶¹ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 145-146, available at <https://brill.com/view/title/20824>

³⁶² T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 103.

³⁶³ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 164, available at <https://brill.com/view/title/20824>

A further article, which needs to be given particular attention, is Article 7, dealing with the access to traditional knowledge associated to GR. It can be considered as adding another element of novelty in regard to the CBD, since article 8(j), which was the main provision of the Convention regulating TK issues, dealt mostly with the safeguarding and control over TK; while the article of the Nagoya Protocol asks States to make sure that access to TK held by indigenous communities is subsequent to PIC and their approval as well as involvement, and that mutually agreed terms (MAT) have been issued³⁶⁴. Again, the provisions of this article narrows the capacity of States under Article 6, to decide whether or not to ask for PIC, as in the case of TK held by indigenous communities it is mandatory.

It could be stated that this particular article elaborates further the rights of indigenous people set in UNDRIP, and precisely the right to maintain, control and protect their TK, as well as the ability to further develop it³⁶⁵. This is proof of the fact that UNDRIP, regardless of the fact that it is a declaration, thus not legally binding, still has had a great deal of importance internationally and it is valued and recognised by a vast majority. The Protocol in fact, as it can be seen in this particular article, recognises the rights of indigenous people over their TK and resources, as it uses the word “held”, again stepping further from the CBD, which ultimately recognised States as owners. Therefore, in this particular case, it is mandatory for States to ensure that TK associated with GR and held by indigenous communities is properly accessed to, following the regulations and standards set by the Protocol, though the article offers some sort of flexibility, in order to allow States to put in practice the most feasible and effective solutions possible³⁶⁶. Some authors have nonetheless criticised such wording, as it allows for States to have too many loopholes, since it provides them with too much flexibility. Some others have still noticed, that since the obligation is mandatory, as proved by the use of “shall”, flexibility only refers to the kind of measures to be enacted at national level³⁶⁷.

Following the provisions related to traditional knowledge, Article 12 is worth mentioning, as it concerns TK associated with GR. This particular provision could be regarded as some sort of overarching frame in which issues associated with TK are dealt with. As a matter of fact, paragraph 1 of the article underlines again the importance of taking into considerations customary law, protocols and procedures of indigenous people related to TK associated with GR, in accordance with the domestic law. Therefore, the article explicitly serves as a reminder of the fundamental role played by the aforementioned regulations when

³⁶⁴ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 109-110.

³⁶⁵ E. MORGERA, E. TSIOUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 170-171, available at <https://brill.com/view/title/20824>

³⁶⁶ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 112.

³⁶⁷ *Ibid.*

dealing with indigenous communities and TK³⁶⁸. Paragraph 2 again restates the importance of actively involving indigenous people in the processes related to the use of TK associated with GR. Particularly, Parties in cooperation with indigenous communities are asked to establish mechanisms to inform potential users of TK about their obligations. This is not a particularly strong obligation, as it is only limited to inform, but it is fundamental in recalling the need to involve indigenous people in the process³⁶⁹. Extremely interesting is also the part dedicated to women within *paragraph 3*. As it was mentioned at the beginning of this chapter, the Indigenous Women's Network on Biodiversity contributed significantly during the negotiation process, to advocate for indigenous groups and women. *Paragraph 3* serves as a reminder of their role, and of the position that indigenous women hold within their communities. Parties are in fact asked to support the development by indigenous communities and especially women, of: community protocols, minimum requirements for MAT and contracts, by focusing especially on clauses related to the benefit-sharing of TK associated with GR³⁷⁰.

A community protocol, according to Morgera, Tsioumani and Buck is: "*a written document developed by a community following a consultative process, to outline the core ecological, cultural and spiritual values and customary laws relating to the community's traditional knowledge and resources, based on which the community provides clear terms and conditions to regulate access to and benefit-sharing from their knowledge and resources*"³⁷¹. It is basically aimed at ensuring that customary law and procedures concerning the access and use of TK associated with GR are respected and enhanced. Moreover, it is a tool to create a sense of belonging and of community among people, to show them they are not alone in facing these issues. Nonetheless, compliance with community protocols remains on voluntary basis, thus not mandatory, unless otherwise determined by the national legislation of the State³⁷². The last paragraph of *article 12* is aimed at ensuring that the customary use of TK and resources amongst and within indigenous communities is not hindered or restricted, since they are and have been for centuries, the holders of such knowledge and associated resources³⁷³.

Now that the provisions concerning traditional knowledge and genetic resources have been analysed in depth, I would like to briefly mention three more articles, namely 17, 20 and 21, before concluding.

³⁶⁸ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 217-218, available at <https://brill.com/view/title/20824>

³⁶⁹ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 140.

³⁷⁰ *Ibid.*

³⁷¹ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 219, available at <https://brill.com/view/title/20824>

³⁷² *Ibid.* p. 222.

³⁷³ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 141.

Article 17 deals with monitoring mechanisms in reference to the utilization of genetic resources. Its aim is to assure compliance with the provisions of the Protocol, as well as transparency. The two most important tools that the article establishes to implement compliance are: the creation of checkpoints and the issuance of internationally recognised certificates of compliance. This particular article can be considered another step forward from the CBD, which did not include specific measures tackling how to monitor the utilization and access to GR, as well as effective measures to ensure the implementation of benefit-sharing obligations³⁷⁴.

With regard to checkpoints, the debate over this particular topic during the negotiations was quite intense. The aim of the proposal is to ensure that the ABS obligations are respected and complied with by the user country within the jurisdiction of the provider country, although the Parties were divided on whether to list specific checkpoints or not, and precisely, on whether to consider patent offices as checkpoints³⁷⁵. Those in favour of listing specific checkpoints argued that without them, compliance would not have been reached effectively. In this case, they were considered as places where a user would go firstly to provide information regarding its activities on GR, later when claiming some rights over the development of their activity or research, and lastly when commercializing the resulting product. The countries against on the other hand, believed that patent offices were not efficient in the fight against misappropriations, thus resulting in an inefficient system. Eventually, the list was not included in the Protocol, replaced by instructions on how to issue efficient and effective checkpoints, thus providing Parties with enough flexibility to decide for themselves, which is the competent checkpoint according to their national legislation, as long as it satisfies the provisions enumerated within the article³⁷⁶. It might be noted that nothing prevents a Party to issue a patent office as checkpoint, if wanted.

The second tool to ensure compliance is, indeed, the certificate of compliance, again a novelty compared to the CBD. The legal nature of the certificate of compliance is to oblige Parties to assess whether if the utilization of GR has been carried out in accordance with the Protocol and domestic legislation, and specifically, if access has been subsequent to the issuance of PIC and MAT. This tool serves as proof of effective compliance for both countries: on the one hand, the provider country is sure that its resources have been accessed according to the law, while the user country could hold the certificate of compliance as proof against allegations of misappropriations³⁷⁷.

³⁷⁴ E. MORGERA, E. TSIUOMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 272-273, available at <https://brill.com/view/title/20824>

³⁷⁵ T. GREIBER, S. PEÑA MORENO, M. ÁHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 174.

³⁷⁶ *Ibid.* p. 175-176.

³⁷⁷ E. MORGERA, E. TSIUOMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 281-282, available at <https://brill.com/view/title/20824>

The last two articles that I would like to briefly mention are Articles 20 and 21. The first deals with codes of conducts, guidelines, best practices and standards, while the latter concerns awareness raising. The reasons behind Article 20 are to be recognised in the fact that the access and utilization of GR involves a number of international public and private actors, ranging from States to transnational corporations, NGOs and research institutes. Therefore, due to the variety of actors involved, it might be useful to develop codes of conducts and standards on a voluntary basis, or self-regulation systems which could allow for proper conduct when dealing with TK, GR and indigenous people. With regard to the latter, their involvement in establishing these instruments should be taken into account³⁷⁸. Even though they are tools enhancing mandatory norms, their importance is even more relevant as their implementation would demonstrate the willingness of the actors involved to act correctly and lawfully.

Lastly, Article 21 promotes awareness-raising of several issues: the Protocol itself and its provisions, meetings as well as a help desk involving indigenous communities and stakeholders, training of users on how to properly approach GR and TK and so forth. The last paragraph encourages awareness-raising and educating indigenous people over community protocols and procedures involving them³⁷⁹. The importance of this particular provision must not be undermined, since GR are involved in several sectors, such as agriculture, beauty and health care, pharmaceuticals and so forth. Therefore, educating the stakeholders belonging to such sectors, thus targeting specific groups, as well as indigenous people, can only enhance the promotion of the CBD and the Protocol, as well as their correct implementation. Moreover, correct and diffuse awareness over ABS issues, both at international and national level, can only serve as a means to increase the proper functioning of ABS regimes³⁸⁰. Furthermore, involving indigenous communities in the process, would be fundamental in raising awareness over issues related to TK and GR, which are intrinsically connected with the holding communities and should thus be considered inseparable, as well as essential in promoting sustainable use. The role of indigenous communities and their rights over their knowledge and resources has been finally recognised within the Nagoya Protocol, and educating not only indigenous people over their rights but also stakeholders and the international community is absolutely needed, in order to lessen the chances of bad conduct and cases of misappropriation.

To conclude, according to M. Y. Teran, who took part in the negotiation of the Protocol itself, its underlying aim is to prevent and stop biopiracy, and to promote business relationships based on mutual

³⁷⁸ E. MORGERA, E. TSIUMANI and M. BUCK, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity*, Koninklijke Brill, Legal Studies on Access and Benefit-sharing, Vol. 2, October 29th, 2010, p. 297, available at <https://brill.com/view/title/20824>

³⁷⁹ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>.

³⁸⁰ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 199-200.

respect and understanding. Despite its adoption, cases of biopiracy have become more common recently, and some States have found it difficult to properly implement the Protocol. Therefore, it could be stated that the instrument presents some sort of vulnerabilities, which need to be tackled in order to prevent misappropriation. In this sense, capacity building and awareness raising play a crucial role in the fight against biopiracy³⁸¹. Also, the Protocol is definitely a new challenge for indigenous communities, since it tackles their main source of survival and livelihood. It could be stated, that the Nagoya Protocol in theory, according to its aims and provisions, is a tool that, if correctly implemented, could actually prevent biopiracy and misappropriation, as well as properly ensuring that the rights of all the actors involved are respected. Unfortunately, the correct implementation at national level sometimes does lack and has negative consequences mostly on those who are unaware of their rights and possibilities. State Parties, especially providing countries, should strive to create a strong and well-established ABS regime, and to inform the indigenous communities living within their borders, if they are any, about their rights and also protect them. These should be regarded as priorities, which go hand in hand with sustainable use and conservation of biodiversity, which are the ultimate goals of the Protocol and on the Convention on Biological Diversity.

³⁸¹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 16.

3. Existing instruments concerning patents: a brief introduction to intellectual property law and patents

Patents have been mentioned many times so far throughout this dissertation, as they are one of the central features involved in biopiracy. Nonetheless, patents are very complex issues from a legal perspective and they have evolved through the course of history, thus they are neither unknown nor recent to the international community. There are three important steps, which have marked the evolution of patents in history: privileges, which were in use mostly between the 15th and 18th century; national patents, issued from 1790 and 1883 and the internationalization of patents, marked by the entry into force of the 1883 Paris Convention³⁸². Privileges were special rights accorded by the sovereign to precise individuals and could include, for instance, exception from taxation. The word “patent” came from Latin “*litterae patentes*”, which were royal “letters patent” issuing those privileges to individual traders³⁸³. The Republic of Venice was the first one to issue these kinds of privileges in 1474, called the “*Parte Veneziana*”. During the 15th and 16th centuries the practice grew and during the period of the Industrial Revolution, it developed rapidly mostly in England, while in countries in which the Industrial Revolution came later, the number of, what where now called patents, remained low³⁸⁴.

During Enlightenment, the United States and France developed national legislations to regulate the issuing and granting of patents to inventors, if certain conditions were met. Nonetheless, some States felt that national patents were hindering international trade, thus during the 1873 Vienna Universal Exposition some concerns were raised, when a patent congress was organized. A few years later, during the Paris Universal Exposition another patent congress was arranged with the goal of establishing a meeting for the drafting of a document for the international protection of industrial property³⁸⁵. States felt the need to draft an international treaty since the practice of asking for patents was becoming more and more common, but it was rather difficult to obtain protection from intellectual property rights in many countries as the laws were very different. Therefore harmonization was needed, and also the development of some sort of international basis. The French government drafted a document proposing the creation of a Union, and sent it to several other countries with an invitation to take part in the International Conference, which was going to be held in Paris in 1880³⁸⁶. At that conference, a first draft for an international Convention was discussed, while at a second diplomatic conference in Paris in 1883, the draft became the Paris

³⁸² World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 17.

³⁸³ P. MARETT, *Intellectual Property Law*, London, Sweet & Maxwell Limited, 1996, p. 7

³⁸⁴ *Ibid.* p. 18.

³⁸⁵ *Ibid.* p. 19.

³⁸⁶ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 360.

Convention for the Protection of Industrial Property, which was signed by eleven States, which became 14 in the following year. Once again, a great absent was the United States of America³⁸⁷.

The Paris Convention was the first ever to deal with some aspects of intellectual property. Moreover, it was the first to introduce in a legally binding document the international law principle of national treatment. Indeed, the treaty can be divided into four main sections: the first one deals with national treatment, which basically means that a country under the Convention must grant to nationals of other countries Parties the same treatment which it would grant to its own nationals. This principle ensures that nationals of other countries will be protected and not discriminated against in any way, which was kind of a breakthrough, considering the fact that so far, countries had sovereign rights over their own citizens and tended to avoid granting rights and protection to their own citizens³⁸⁸.

The second section of the Convention establishes a series of provisions dedicated to the right of priority, which is a really advantageous provision for patent applicants. As a matter of fact, it assures to applicants a period of six to twelve months to apply for protection not only in the country where they filed the application, but also in the other countries Party to the Convention. Moreover, they would benefit also from the national treatment principle, thus reinforcing the right of priority too³⁸⁹. The third category of provisions of the Convention is dedicated to substantive law, and in particular it sets a series of rules establishing rights and obligations for both natural persons and legal entities. The last section, the fourth one, deals with the administrative framework designed to enhance the implementation of the Convention itself³⁹⁰.

Interestingly, the Paris Convention and following ones, as there have been several, do not provide a legal definition of patents or of intellectual property (IP). To name a few: the Berne Convention for Literary and Artistic Works of 1886, the Hague Agreement Concerning the International Deposit of Industrial Designs of 1925, the International Convention for the Protection of New Varieties of Plants of 1961, the Patent Cooperation Treaty of 1978 and the Agreement on Trade-Related Aspects of Intellectual Property Rights or “TRIPS” of 1993. As it can be understood from the titles, the many treaties all deal with aspects of intellectual property, but they lack a proper definition³⁹¹. Interestingly, the Convention Establishing the World Intellectual Property Organization of 1967, does not seek to define IP, although it does provide a

³⁸⁷ World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. 241.

³⁸⁸ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 361.

³⁸⁹ *Ibid.* p. 363.

³⁹⁰ *Ibid.* p. 360-361.

³⁹¹ World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. iv-v.

list of elements, which are protected by IP rights, such as: literary and artistic works, performances of performing artists, inventions, scientific discoveries, industrial designs, and trademarks³⁹².

In this sense, WIPO has defined intellectual property in a very broad sense, as: “*the legal rights which result from intellectual activity in the industrial, scientific, literary and artistic fields*”³⁹³. And also, as creations of the mind, namely literary and artistic works, inventions, symbols, names and images used for commercial purposes. On the other hand, Drahos and Frankel identify intellectual property as a generic term referring to a system of positive law, which in some cases dates back to medieval times, as in the case of patent law, and in some others is far more recent. Intellectual property deals with intangible objects, and grants exclusive rights of ownership over said objects³⁹⁴. Nonetheless, in my opinion, the most encompassing definition of intellectual property, although not a legal one, is the one provided by Farida Shaheed, former Special Rapporteur in the field of cultural rights, who in her report dedicated to copyrights and the rights to science and culture, stated that: “*Intellectual property is an umbrella term encompassing a number of distinct legal regimes that create private property rights related to intangible assets. Specific legal regimes pertaining to copyrights, patents, trademarks, industrial designs, trade secrets, etc., each regulate different forms of intellectual property, defining the types of creations it applies to, the rules for determining whether specific material qualifies for legal protection and which types of conduct will be considered to infringe the owner’s exclusive rights, and establishing the legal penalties for such acts.*”³⁹⁵.

Also the TRIPS agreement does not provide a specific definition, though at Article 1.2 states that intellectual property shall refer to some categories outlined in Part II of the agreement, namely copyrights and related rights, trademarks, geographical indications, industrial designs, patents, layout-designs and protection of undisclosed information³⁹⁶. Indeed, intellectual property is traditionally divided into two main branches, namely copyrights and industrial property. Patents fall under the category of industrial property, alongside with utility models, industrial designs, trademarks and trade names to name a few³⁹⁷. Industrial property is thus restricted to those properties and rights, which have a close and straight connection with industry. Fortunately, with regard to industrial property, the Paris Convention comes into

³⁹² World Intellectual Property Organization, *Understanding Industrial Property*, 2nd edition, Geneva, WIPO Publication, 2016, p. 5, available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_895_2016.pdf

³⁹³ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 3.

³⁹⁴ P. DRAHOS and S. FRANKEL, *Indigenous People’s Innovations*, Canberra, Australian National University E Press, 2016, p. 1.

³⁹⁵ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed: Copyright policy and the rights to science and culture*, A/HRC/28/57, December 24th, 2014, p. 5.

³⁹⁶ World Trade Organization, *Agreement On Trade-Related Aspects Of Intellectual Property Rights (TRIPS Agreement), Annex IC of the Marrakesh Agreement establishing the World Trade Organization*, Morocco, April 15th, 1994, available at https://www.wto.org/english/docs_e/legal_e/27-trips.pdf

³⁹⁷ World Intellectual Property Organization, *Understanding Industrial Property*, 2nd edition, Geneva, WIPO Publication, 2016, p. 5, available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_895_2016.pdf

assistance by providing not exactly a definition, but at least a range of forms to which it shall apply, at Article 1, paragraph 3:

“Industrial property shall be understood in the broadest sense and shall apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers, and flour”³⁹⁸.

Patents cannot be properly analysed, without first having provided a further and through analysis of IP rights. Interestingly, also the Universal Declaration of Human Rights states, by Article 27, that everyone is entitled to benefit of the protection for the moral and material interests resulting from a scientific, literary or artistic work, in the case in which they were recognised as authors³⁹⁹. The TRIPS recognizes intellectual property rights as private rights, while Posey and Dutfield state that IP rights are economic rights⁴⁰⁰. Marett reiterates this concept, by affirming that IP rights basically ensure the right of the owner to make money out of his property, therefore IP rights are economic ones. Moreover, to reinforce this argument, Marett states that usually, in case of breach of their rights, owners are entitled to pecuniary compensation. Essentially, IP rights grant to the owner the possibility, or better, the exclusive right, to carry out specific actions with his intellectual property, while at the same time restraining others from doing the same⁴⁰¹. Exploiting the owner’s property without his consent or authorisation would result in the infringement of his own right.

Of course, since as it was already stated, IP consists of several forms, these rights refer and extend to each one of them, with some differences. For example in the case of copyrights, IP rights protect the author from unauthorised copying of his IP, while in the case of patents, patent rights protect the owner from the unauthorised use of a patented product or process⁴⁰². Marett identifies also a set of IP rights, which he defines as moral, which are generally three, mostly referring to the field of copyrights. The first moral right refers to the author’s right to be recognised as such, the second refers to the author’s right to preserve his work from prejudicial treatments such as distortion or mutilation. Lastly, the third one invokes the author’s right not to be falsely attributed some other work, of which he or she is not the actual author⁴⁰³. Therefore, the nature of IP rights can be different, as they have been described as consisting of

³⁹⁸ Paris Convention for the Protection of Industrial Property, March 20th, 1883, available at <https://wipo.int/en/text/287556>

³⁹⁹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed: Copyright policy and the rights to science and culture*, A/HRC/28/57, December 24th, 2014, p. 4.

⁴⁰⁰ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 76

⁴⁰¹ P. MARETT, *Intellectual Property Law*, London, Sweet & Maxwell Limited, 1996, p. 8.

⁴⁰² *Ibid.* p. 9.

⁴⁰³ *Ibid.* p. 47.

either private, economic and in some other cases moral rights. What can clearly be stated is that since IP itself consists of several forms, there are various types of IP rights, changing from form to form accordingly. They consist of the legal protection granted to persons over their own creative efforts, and ensure an exclusive right over the use of said creation for a certain period⁴⁰⁴.

Patents are a form of industrial property, which is granted for new inventions. Although not a legal definition, a patent can be described as a legal certificate that entitles exclusive rights to the owner, or the inventor, since it is granted for new inventions, which prevent others from using, commercializing or importing the invention for a given period. The infringement of the owner's exclusive right can be pursued through legal action. Patents can later be bought or sold or licensed⁴⁰⁵. WIPO's Handbook on Intellectual Property defines patents as documents issued by a government office following an application, which describes an invention and thus creates legal conditions, according to which the patented invention can only be exploited, namely used, sold and imported consequently to the authorization of the owner of the patent. It also defines an invention as a solution to a specific problem, which can be in both forms of a product or a process, related to the field of technology⁴⁰⁶. In some occasions, patents have been referred to as monopolies although in almost no country, according to national laws, is the owner of a patent entitled to sell or make anything. Therefore, the statutory right the owner is granted only prevents others from exploiting the patented invention, but it does not allow him to practice his invention⁴⁰⁷. Nonetheless, Hansen and Vanfleet do agree on the idea that an exclusive right is in fact a monopoly, as it grants almost exclusive control over the sale, use and development of patented items. The exclusion of others from the possibility of using an invention, or the fact that they can exploit only following the owner's authorization, renders in fact the patent some sort of monopoly, although the literature is quite divided on the matter⁴⁰⁸.

The definition of patents cannot be considered fulfilled, if the requirements of patentability are not taken into consideration. As a matter of fact, patents can be accorded only if some criteria are met. Interestingly, no international treaty has defined clearly the conditions of patentability. Mgbeoji states, that until now, there is no clear international law on the system of patents. None of the elements, which constitute patentability criteria, have been properly defined according to an international legal instrument. Indeed, due to the lack of a clear definition concerning the requirements at the international level, the fulfilment at

⁴⁰⁴ S. A. HANSEN and J. W. VANFLEET, *Traditional Knowledge and Intellectual Property: A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting their Intellectual Property*, Washington DC, AAAS, 2003, p. 4.

⁴⁰⁵ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 76.

⁴⁰⁶ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 123.

⁴⁰⁷ *Ibid.*

⁴⁰⁸ S. A. HANSEN and J. W. VANFLEET, *Traditional Knowledge and Intellectual Property: A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting their Intellectual Property*, Washington DC, AAAS, 2003, p. 9.

domestic level has been subject to interpretations⁴⁰⁹. The only condition, which has been described in an international legal instrument, namely the TRIPS, is patentable subject matter. In order to be considered patentable, an invention must fall within the scope of patentable subject matter, as outlined by Article 27 of the TRIPS. The same article, in order to properly define what is patentable and what is not, states the three criteria that an invention must have, in order to be considered patentable, namely: novelty, inventive step and industrial application. Therefore, patents can be available for inventions, whether they are in the shape of product or process, if they fall within the technological field and demonstrate the aforementioned requirements⁴¹⁰.

Interestingly, patentable subject matter is more easily described negatively, in the sense that the article, in order to provide a clearer definition, states, by paragraph 3, all the elements which do not constitute patentable subject matter and thus do not possess requirements for patentability and cannot therefore be patented⁴¹¹. I will extensively explain the provisions of Article 27 of the TRIPS Agreement in the following chapter. For now it is sufficient to establish that the criteria for patentability are mentioned in the article, although not clearly defined, and that for that matter, it has been criticised as too vague and broad, thus allowing States to find loopholes in order to patent inventions and set criteria according to their national legislations. As a matter of fact, WIPO's report when describing what patentable subject matter is, does not state "according to international law", but that patentable subject matter is defined by national law⁴¹².

The three criteria set out by Article 27 are: novelty, inventive step and industrial application. Novelty is a fundamental and undisputed requirement for patentability. Interestingly, as for patentable subject matter, novelty is more easily identified not for what it is, but for what it is not. Indeed, novelty cannot be established nor proved, only its absence can⁴¹³. An invention, in order to be considered new, should be recent and original, meaning that it should not fall within "prior art". This expression is generally referred to as all the already existing knowledge, since all the knowledge, which is already in the public domain, cannot be patented. Interestingly, Mgbeoji notes that knowledge again has no universally agreed upon legal definition, as well as publication, thus allowing again an open possibility for States to apply rules

⁴⁰⁹ I. MGBEOJI, *Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy*, Indiana Journal of Global Legal Studies, Vol. 9: Issue 1, Article 9, 2001, p. 174-175.

⁴¹⁰ World Trade Organization, *Agreement On Trade-Related Aspects Of Intellectual Property Rights* (TRIPS Agreement), Annex 1C of the Marrakesh Agreement establishing the World Trade Organization, Morocco, April 15th, 1994, available at https://www.wto.org/english/docs_e/legal_e/27-trips.pdf

⁴¹¹ *Ibid.*

⁴¹² World Intellectual Property Organization, *Understanding Industrial Property*, 2nd edition, Geneva, WIPO Publication, 2016, p. 5, available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_895_2016.pdf

⁴¹³ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 125.

according to their own legislations and interests⁴¹⁴. Moreover, in many countries knowledge is only orally transmitted, thus making it even harder to define whether if the knowledge already existed or not.

Indeed, the concept of “prior art” should encompass all the aspects of knowledge, both tangible and intangible ones, since it should cover both written and oral disclosure. Indeed, prior art is recognised under three conditions, namely through a description in a published writing, through a description in spoken words, and through its use. Thus, oral disclosure is a feature considered by prior art and orally transmitted knowledge is thus part of prior art⁴¹⁵. Nonetheless, Mgbeoji again considers the fact that for instance, indigenous knowledge, which is mostly orally transmitted, is very broad and evolving, not a fixed and well-established concept, but rather a dynamic one and that in many occasions it is mistakenly considered, since it is also very ancient, as much as publicly well known and that for this very reason it cannot be patented. This is however false and not accurate, as it lacks to take into account that the sometimes too sharing nature of indigenous communities tends to make them share their own knowledge, which could be easily misappropriated by entities, either States or institutions, or TNCs, who would find interpretations suitable for their own interests⁴¹⁶. To conclude, an invention, in order to be patented, must not be anticipated by prior art.

The second requirement is inventive step, also referred to as non-obviousness, and it is a rather complex concept. WIPO defines this second element as occurring when an invention shows innovation, meaning that it would not be obvious for an expert with a certain amount of knowledge in the field, thus said person could not easily deduce it. This second element is some sort of a natural consequence and reassurance of the first one concerning novelty. Indeed, if an invention passed the first requirement, the second one asks whether if the invention involves some sort of an innovative step from the existing prior art surrounding it⁴¹⁷. Nonetheless, novelty and inventive step are two different criteria. Novelty exists only if there is absence of prior art, while inventive step can only be established if novelty has already been demonstrated. The invention should thus demonstrate some sort of inventiveness, by being for example the result of a creative idea, and at the same time, be some sort of a step forward from the already existing prior art. The step should be appreciated and noticed by an expert in the field, thus involving a certain amount of difference and non-obviousness, thus demonstrating some sort of advance or progress from prior art⁴¹⁸.

⁴¹⁴ I. MGBEOJI, *Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy*, Indiana Journal of Global Legal Studies, Vol. 9: Issue 1, Article 9, 2001, p. 176.

⁴¹⁵ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 127.

⁴¹⁶ I. MGBEOJI, *Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy*, Indiana Journal of Global Legal Studies, Vol. 9: Issue 1, Article 9, 2001, p. 179.

⁴¹⁷ P. MARETT, *Intellectual Property Law*, London, Sweet & Maxwell Limited, 1996, p. 95.

⁴¹⁸ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 126-127.

The last criteria identified by Article 27 of the TRIPS agreement is industrial applicability, since the invention, in order to be considered such, must fall within the field of technology. This last requirement is also referred to as utility. Clearly, an invention must be of some practical use and not purely theoretical: it must be carried out in practice and have some sort of industrial applicability. Since a patent can cover both a tangible product and a process, the invention should be capable of being carried out or used in practice, or more precisely, it should be possible to manufacture it industrially⁴¹⁹. According to WIPO, the term industrial should be considered in the broadest sense possible, including any kind of industry. This requirement is met when the invention can be easily reproduced in industries, without taking into account its use. The usefulness of the invention is only then taken into account for determining industrial applicability. Interestingly, according to the country, this criteria is either required as industrial applicability (especially in the USA), or as utility, thus by considering only its usefulness⁴²⁰.

As it was already stated, since the criteria are not extensively defined and patent law changes according to national legislations, some other authors tend to include a fourth requirement, namely disclosure of the invention, which means establishing whether the invention is sufficiently disclosed in the application⁴²¹. For instance, Posey and Dutfield do not consider disclosure of the invention as a criterion, since according to them, an invention can be patented only if it is novel, useful and non obvious⁴²². Also Mgbeoji does not take into account disclosure, but only the three aforementioned⁴²³. Disclosure of application indeed refers to the fact that the application for the patent should be provided with a detailed description, allowing experts or skilled individuals in the field, within which the invention falls, to easily use and reproduce it. The description should therefore, not only contain an extensive explanation of the criteria of novelty and inventive step, but also the techniques and instructions which would allow a skilled person in that field to easily make and use the invention. It must be therefore clearly and completely disclosed⁴²⁴.

The issuing, although mostly the granting of a patent, allows for a certain amount of rights, which could be divided in two groups, namely the rights establishing what the owner can do and the rights which instead prevent others from doing. These together constitute the so-called patent rights, which are a

⁴¹⁹ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 125.

⁴²⁰ World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. 18.

⁴²¹ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 127.

⁴²² D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 76.

⁴²³ I. MGBEOJI, *Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy*, Indiana Journal of Global Legal Studies, Vol. 9: Issue 1, Article 9, 2001, p. 179.

⁴²⁴ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 128.

branch of IP rights. A patent has been compared to personal property⁴²⁵. As a consequence, the owner has an exclusive control (in some cases referred to as a monopoly) over its own property. According to the owner's will, the patent can be assigned to someone else for an agreed term, or it can be mortgaged. They could also decide, for example, to license to someone else the development of the invention into a product, meaning that the work on the invention can be licensed⁴²⁶. As a matter of fact, Article 28 of the TRIPS Agreement states that patent owners have the right to assign or transfer their patent or they could decide to conclude licensing contracts. The other set of rights refers to what the owner can prevent others from doing, thus these rights are mainly expressed in negative terms⁴²⁷.

As it was already explained, IP and patent law vary from legislation to legislation accordingly, thus there are only some broad rights, which have been recognised at the international level by the TRIPS Agreement and precisely at Article 28. The article confers to the owner two specific sets of exclusive rights, which change according to whether if the subject matter is either a product or a process. In the case of products, owners can prevent others, in case there is no authorisation, to make, use, offer for sale, sell or import such product. In the case of processes, others must avoid to use said process or, as for products, they have to refrain from making, using, selling, offering for sale, selling or importing a product obtained from that process⁴²⁸.

As for a conclusion, the relevance of patents in regard to biopiracy has been extensively described. Biopiracy is an act of misappropriations in most cases carried out through the issuing of a patent and this explains the importance of understanding how a patent works and what does it entail. What has nonetheless emerged from this analysis is that the patent system is far from being perfect, and the lack of clear international regulations is one of the many reasons, as it allows too much space of manoeuvre to States and their interests. The next chapter will be focused on Article 27 of the TRIPS, which regards, besides patentable subject matter, exclusion from patentability, and that has been extensively criticised for being too vague, thus allowing for loopholes resulting in biopiracy cases. Later on, the issue of patent protection in regards to traditional knowledge will be dealt with, in order to fully analyse patents and their weaknesses concerning traditional knowledge, so as to have a thorough and deeper understanding of how biopiracy can happen, but also of how it can be avoided.

⁴²⁵ P. MARETT, *Intellectual Property Law*, London, Sweet & Maxwell Limited, 1996, p. 88.

⁴²⁶ P. MARETT, *Intellectual Property Law*, London, Sweet & Maxwell Limited, 1996, p. 89.

⁴²⁷ World Trade Organization, *Agreement On Trade-Related Aspects Of Intellectual Property Rights* (TRIPS Agreement), Annex IC of the Marrakesh Agreement establishing the World Trade Organization, Morocco, April 15th, 1994, available at https://www.wto.org/english/docs_e/legal_e/27-trips.pdf

⁴²⁸ *Ibid.*

3.1 The TRIPS Agreement: a focus on article 27

The Agreement of Trade-Related Aspects of Intellectual Property Rights, or TRIPS, was the result of the long negotiations, which took place within the framework of the General Agreement on Tariffs and Trade. The multilateral trade negotiations, which became the Uruguay Round, were launched at Punta del Este in 1986 and were concluded on December 15th, 1993. As a result, the TRIPS integrated the GATT and consequently, the Agreement Establishing the World Trade Organization (WTO) was adopted in Marrakesh in 1994⁴²⁹. The particular relevance of these negotiations is not limited to the establishment of the WTO, but mostly it concerns the fact that for the first time ever, intellectual property protection was included in the discussions. This was mostly due to the concerns expressed by the US government on behalf of its industries that IP rights protection needed to be addressed internationally. As a consequence, developing countries started to express an urgency to be involved in the discussions, as they feared that the occasion would result in the furthering of only developed countries⁴³⁰. Nonetheless, developing countries were reluctant to include IP protection within the Uruguay Round's discussions, as they considered WIPO a more suitable framework for matters related to IP.

Moreover, the specific and strict agenda of the Uruguay Round and the strong influence of developed countries and industries present at the multilateral trade negotiations were two further reasons, which made developing countries reluctant to the discussion, while developed countries and the US in particular were not satisfied by the developments made within WIPO and thus were looking for a new framework⁴³¹. However, eventually developing countries took part in the negotiations, as the discussions ranged from tariffs and non-tariff measures, multilateral trade agreements, dispute settlement, tropical products and agriculture, natural based products and so forth, thus making the occasion too rich of issues to be left behind. As a matter of fact, the Uruguay Round was presented at developing countries as a unique opportunity to achieve tangible gains. Thus, even though the US was pushing to introduce IPRs into the agenda, developing countries took part in the negotiations⁴³².

Clearly, the two groups of developed and developing countries again approached the negotiating table with different interests and objectives at stake. The developing countries mostly focused on obtaining two sets of goals: to be granted access to developed countries' markets for their agricultural products and again to be granted access for their textiles goods⁴³³. Therefore, one of the arguments, which were introduced in the negotiations, was the granting of patents for plants. Developing countries feared that

⁴²⁹ World Intellectual Property Organization, *Introduction to Intellectual Property: Theory and Practice*, London, Kluwer Law International Ltd, 1997, p. 475.

⁴³⁰ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 24.

⁴³¹ *Ibid.*

⁴³² *Ibid.*

⁴³³ K. W. McCABE, *The January 1999 Review of Article 27 of the TRIPS Agreement: Diverging Views of Developed and Developing Countries Toward the Patentability of Biotechnology*, *Journal of Intellectual Property Law*, Volume 6, Issue 1, Article 3, October 1998, available at <http://digitalcommons.law.uga.edu/jipl/vol6/iss1/3>

granting patents for plants might restrict access for them and that the prices of subject matter would eventually rise and endanger their economies⁴³⁴. Their goal was to limit the definition of patentable subject matter, by excluding plants and living organisms from patentability. Developed countries were on the other hand lobbying, mostly on behalf of TNCs for a very restrictive language, especially for Article 27 of the TRIPS. They tried to lobby for a more extensive definition of patentable subject matter which would include living organisms, plants and seeds altogether, opposite to developing countries, which would have rather preferred to exclude them. This particular issue proved to be, and still is, one of the most controversial⁴³⁵.

As the title of this chapter suggests, the focus will be on Article 27, after having provided a brief analysis of the TRIPS in general. This particular article is quite relevant because, apart from patentable subject matter, it deals with those categories of goods, which are excluded from patentability. The patent section of the TRIPS was one of the most debated for its political and economic controversy, and the provisions of this article in particular have been an example of this⁴³⁶. Indeed, it was decided during the negotiations that Article 27.3(b) was to be revised four years after the adoption of the WTO Agreement in 1999, thus showing that the controversies surrounding the article were not exactly solved. This particular decision was also controversial, as the developed countries led by the US were convinced of the fact that no further discussion was needed, while developing countries led by the African delegation presented a document explaining why further discussion was needed⁴³⁷.

First, it is important to have clearly in mind the provisions of Article 27:

1. Subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.⁵ Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.
2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.
3. Members may also exclude from patentability:

⁴³⁴ K. W. McCABE, *The January 1999 Review of Article 27 of the TRIPS Agreement: Diverging Views of Developed and Developing Countries Toward the Patentability of Biotechnology*, Journal of Intellectual Property Law, Volume 6, Issue 1, Article 3, October 1998, available at <http://digitalcommons.law.uga.edu/jipl/vol6/iss1/3>

⁴³⁵ *Ibid.*

⁴³⁶ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 32-33.

⁴³⁷ *Ibid.*

- (a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;
- (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement⁴³⁸.

As it was already explained in the previous chapter, paragraph 1 provides indications related to the issuing of patents and the criteria for patentability, in the attempt to define patentable subject matter. Interestingly, patentable subject matter is defined in negative terms, or to be more precise, the article outlines what can be excluded from patentability, thus not falling within the category of patentable subject matter. This has quite been agreed upon, while the following provisions have been the ones more heatedly debated, and in particular paragraph 3(b)⁴³⁹. The 2nd paragraph concerns exclusion from patentability as well, but refers to those inventions, which are contrary to *ordre public* or morality. Basically, it enables States to prevent the issuing of patents, were the inventions contrary to the State's own public order or moral codes⁴⁴⁰. On the other hand, the following paragraph excludes from patentability specific methods of treatments for humans and animals, as well as plants and animals. Therefore, animals and plants are excluded from patent protection, while micro-organisms must be nonetheless protected, thus can be patented. With regard to plant varieties, it is up to the discretion of States to decide whether to protect them either through patents or a sui generis system⁴⁴¹.

It might be important at this point to briefly mention the difference between plants and plant varieties and why it does exist. The history dates back to the 1930s, when the USA had established within their legislation the possibility to have an exclusive right over asexually reproduced varieties of plants, granted through the issuance of a plant patent, as it was called. This case was controversial and States after the Second World War, as trade became more and more entangled internationally, felt the need to draft a document concerning the protection of cultivated plants. As a consequence, the International Convention for the Protection of New Varieties of Plants was adopted in 1961, establishing also the International Union for the Protection of New Varieties of Plants or UPOV⁴⁴². The Convention declares at Article 2 the

⁴³⁸ World Trade Organization, *Agreement On Trade-Related Aspects Of Intellectual Property Rights* (TRIPS Agreement), Annex IC of the Marrakesh Agreement establishing the World Trade Organization, Morocco, April 15th, 1994, available at https://www.wto.org/english/docs_e/legal_e/27-trips.pdf

⁴³⁹ World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. 445.

⁴⁴⁰ K. W. McCABE, *The January 1999 Review of Article 27 of the TRIPS Agreement: Diverging Views of Developed and Developing Countries Toward the Patentability of Biotechnology*, *Journal of Intellectual Property Law*, Volume 6, Issue 1, Article 3, October 1998, available at <http://digitalcommons.law.uga.edu/jipl/vol6/iss1/3>

⁴⁴¹ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 40.

⁴⁴² World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. 332.

definition of varieties, which differs from plants, in the sense that: “*the word "variety" applies to any cultivar, clone, line, stock or hybrid which is capable of cultivation*”, and the article adds, that it applies to those following also the provisions outlined in Article 6⁴⁴³. The Convention focuses on the creation of a system, which grants and protects breeders’ rights, according to the national legislations of the State Parties to UPOV. The scope is to protect breeders’ rights in particular related to new plant varieties, which can be described as the physical unit resulting from a selection process starting from a particular plant material, thus resulting in a unit with peculiar morphological and physiological characteristics⁴⁴⁴. This is mostly why UPOV Convention has not been given too much attention within this dissertation, as it only deals with the intellectual property of breeders, thus narrowing the subjects too much in respect to biopiracy. As it was described, biopiracy mostly affects indigenous people and not breeders, thus, the analysis of a too specific legal document, such as the UPOV Convention, as much as fascinating, would not have served to the purpose of this dissertation.

Before taking into account the several critics, which have been associated with this article from its drafting, it is important to understand thoroughly its provisions. In this sense, the interpretations provided by Jonathan Curci are extremely useful. According to the author, there are four possible implementations for the provisions of *paragraph 3*, according to a literal interpretation: in the first case, Member States have the possibility to grant patents for inventions in the field of biotechnology by not excluding plants, animals and biological processes; secondly, Member States can decide to rule out from patentability plants and animals, but not plant varieties; in the third place, Member States have the option to rule out from patentability also plant varieties and establish a *sui generis* IPR protection system to protect them; and lastly, they can settle for some sort of compromise as the suggested by the USA, and decide to allow the patentability of plant varieties but at the same time establishing a *sui generis* protection system⁴⁴⁵.

The main reason for these many interpretations is first and foremost the language of Article 27, which has been referred to as too vague and open wide for interpretations, since especially paragraph 3(b) features the word “may”, thus leaving quite an amount of discretion to States. To begin with, it is not clear the definition from a legal perspective, of how the TRIPS distinguishes between plants, animals and micro-organisms, which could be patented and those which under no circumstances can be patented, and the same can be said for microbiological and non-biological processes⁴⁴⁶. Indeed, Curci demonstrates a fair example: “[...] *one common microbiological process uses an engineered gene to modify a biological product; more often than not the resulting product is new, involves an inventive step, is capable of*

⁴⁴³ *International Convention for the Protection of New Varieties of Plants*, Paris, 1961 available at https://www.upov.int/upovlex/en/conventions/1961/w_up610.html#_2

⁴⁴⁴ World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edition, WIPO Publication, No. 489 (E), 2008, p. 332.

⁴⁴⁵ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 40.

⁴⁴⁶ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 41.

*industrial application, and is thus, apparently, a patentable invention under Article 27*⁴⁴⁷. Moreover, Curci raises another important objection, related to the issue of genes. According to the author, genes as well as cell lines are derived from organisms through microbiological processes. Nonetheless, the article only refers to animals and plants, thus leaving wide open the question of when a gene or cell does become plant or animal and therefore it can be excluded from patentability, instead of being only a biological component. Consequently, it may be argued according to the language of the article that only the “end products”, namely patents and animals cannot be patented, while the question remains open for cell lines⁴⁴⁸.

Several other objections were raised by a group of States led by the African delegation during the TRIPS Council meetings. The group included many developing countries, which had not been satisfied by the discussion and approval of Article 27.3. They wrote a joint paper in which they presented their views and submitted it to the TRIPS Council in 2000, in which they objected the article mostly in six points⁴⁴⁹. In the first place, they took into consideration the issue of development. They believed that said provisions could hinder their development, as they still had not benefited either from globalization or from the biotechnological revolution and from any of the advantages promised by the TRIPS⁴⁵⁰. Secondly, the group of States expressed its concerns again over the terminology, by stating that the division between plants and animals on the one side, which are excluded from patentability, and micro-biological and non biological processes and micro-organisms, which are actually patentable, was nothing but arbitrary and artificial, as well as in contrast with the principles of intellectual property law. Furthermore, they expressed doubts over the terminology related to the protection of plant varieties and the sui generis system. Indeed, the article does not provide any clear definition of what is meant by sui generis system, though States are expected to them in practice anyhow⁴⁵¹.

The last three points, are the most interesting and relevant in particular with regard to the main topic of this dissertation, namely biopiracy. The fourth concern raised by the group concerned the ethics of patenting life forms. They reiterated the concept already expressed during the negotiations, that the patenting of either human, plant or animal life is by all means unethical, as well as it raises doubts and concerns from a religious and cultural perspective. They also underlined that both the commodification and marketization of life forms should be regarded as equally deplorable⁴⁵². Furthermore, the States led by the African delegation, which were almost all developing ones, were worried about the controversial

⁴⁴⁷ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 41.

⁴⁴⁸ *Ibid.* p. 42.

⁴⁴⁹ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 33.

⁴⁵⁰ *Ibid.*

⁴⁵¹ *Ibid.*

⁴⁵² J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 40.

relationship between TRIPS and the conservation and sustainable use of genetic resources. They argued that the provisions of the TRIPS should be interpreted in accordance with the CBD and that the provisions of the Convention should have been enforced and respected, since developing countries are the ones most rich of biological diversity, which benefits the whole world⁴⁵³. Lastly, they raised issues regarding the relationship between traditional knowledge, TRIPS and farmer's rights. They argued that farmers have their own systems of knowledge, with which they work and live. These systems of knowledge, which allow also for the conservation and sustainable use of resources, should be safeguarded and recognised not only at the national but also at the international level⁴⁵⁴.

Interestingly, the concerns raised were all coming from developing countries, while for developed countries, led by the USA, the discussion over the article had already come to an end and felt no need to discuss it further. It is important to remember that the USA during the negotiations tried their best to lobby against the discussion of exclusion from patentability, trying to remove at once the exceptions to patentability permitted by the article, in order to include also plants and living organisms among patentable subject matter⁴⁵⁵. Later on, alongside with many other Western countries, they have tried to prevent developing countries from reviewing the article, even though so many concerns were raised. One concern in particular, which was presented in more than one occasion and by many States is worth mentioning. After the adoption of the CBD in 1992, States proposed a revision and amendment of the provisions of Article 27 in light of the Convention, by evaluating a new system, which would take into account fairly the conservation and sustainable use of biological diversity, as well as the protection of the rights of indigenous people⁴⁵⁶. This concern, or more precisely, the relation between the TRIPS and the CBD and the issue of their incompatibility, will be the focus of the following chapter.

⁴⁵³ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 33-34.

⁴⁵⁴ *Ibid.*

⁴⁵⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 129.

⁴⁵⁶ *Ibid.*

4. Incompatibility between TRIPS and the Convention on Biological Diversity: True or False?

How can a Convention on the access and use of biological diversity and the international agreement on intellectual property be related? What sort of connection is there? One of the peculiar characteristics of biopiracy is that it entangles several aspects, which would not, maybe, be connected. As a matter of fact, it involves access to and use of genetic resources, traditional knowledge and indigenous people, intellectual property and, as it will be demonstrated, human rights. The first chapter of this section has been dedicated to one particular issue, namely the absence of conventions concerning biopiracy, while the following ones have outlined the existing legal documents, which address some of the aspects related to biopiracy. It is fair enough to state that biopiracy cases happen not only because there is no precise legal framework aimed at redressing it, but also because actors perpetrating biopiracy have found loopholes in the existing legal instruments, allowing them to carry on and, unfortunately, develop the practice. The relevance of establishing, whether if some sort of incompatibility between the TRIPS and the CBD exists, lies in the fact that if the two legal instruments are in some way incompatible or overlap, it could have extremely negative consequences in regard to biopiracy, and be also one of the main causes of its existence.

The incompatibility between CBD and TRIPS has been argued and addressed by many, under several different perspectives. First of all, it might be important to evaluate an eventual conflict from a legal perspective. According to Curci, the two treaties operate in manners that could enhance conflict, but was not that the case, they surely leave some degree of uncertainty⁴⁵⁷. Indeed, the CBD aims at conserving and protecting biological diversity, while the TRIPS aims at easily allowing biological patentability for all, thus it can be seen that the two have diverging principles. Nonetheless, the author declares that from a strict international law perspective, the alleged conflict between the two Treaties does not exist, although he does recognise that from the implementation of both treaties, some sort of conflict could arise from inconsistent provisions⁴⁵⁸.

Article 16 of the CBD is dedicated to the connection between its provisions and intellectual property rights. Particularly at paragraph 5, it establishes a clear connection between its provisions and IPRs, so as to avoid eventual conflicts. Indeed, the article recognises that intellectual property rights and patents may have an influence on the provisions of the Convention, although they should cooperate according both to

⁴⁵⁷ J. CURCI, *The New Challenges to the International Patentability of Biotechnology: Legal Relations Between the WTO Treaty on Trade- Related Aspects of Intellectual Property Rights and the Convention on Biological Diversity*, Brigham Young University International Law & Management Review, Vol. 2, Issue 1, Article 2, December 20th, 2015, p. 4, available at <https://digitalcommons.law.byu.edu/ilmr/vol2/iss1/2>

⁴⁵⁸ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 54.

national and international law, in order to make sure that conflicts are avoided⁴⁵⁹. Truthfully, the regime enhanced by the TRIPS Agreement may undermine especially the PIC provisions of the CBD, which require the prior informed consent of the owners of traditional knowledge for its use and access, as well as for genetic resources. The TRIPS do not require the transparency of PIC, therefore the two treaties are inconsistent in this regard⁴⁶⁰.

The NGO GRAIN, its features and efforts, especially in regard to the fight against biopiracy, have been already introduced in the chapter dedicated to NGOs. The position held by GRAIN is far harsher than that proposed by Curci, since according to them, the CBD and TRIPS are incompatible also from a legal standpoint. To begin with, the principles and objective guiding the two legal instruments are antithetical. Since the CBD aims at strengthening the capacity of State Parties to conserve and protect their biodiversity, while the TRIPS' goal is to grant private property rights over products or processes, which could be also based on biodiversity, it seems that TRIPS are more interested in the privatisation of biodiversity, instead of its protection⁴⁶¹. Moreover, the system of rights established by both legal instruments is conflicting: the granting of a patent is based on innovation, being novelty one of the criteria of patentability, while the granting of rights under the CBD is consequent to pre-existing rights towards genetic resources and traditional knowledge. Furthermore, the Preamble of the TRIPS defines intellectual property rights as private rights, while the set of rights established by the CBD, and mostly after the introduction of the Nagoya Protocol, aims at protecting and ensuring the rights of indigenous people⁴⁶². Thus, according to the NGO, IPRs under TRIPS run counter to the Convention especially on three main points: the provisions of Article 3 and 8(j) of the CBD cannot be properly met due to the IPR system; the conservation of biological diversity is not allowed and possible in a world where private monopoly rights also on biological processes and resources exist; lastly, access and benefit sharing is undermined by those monopoly rights, as access control will be in the hands of the owner, and not in those of the State. Indeed, they argue that States will have to choose to which Convention to give prevalence⁴⁶³.

Interestingly, both Curci and GRAIN do recognise that there are legal inconsistencies, in reference to CBD and TRIPS obligations. From this perspective, four possible areas of conflict arise. The first one regards the already mentioned set of rights, since the CBD establishes for States Parties public rights over genetic resources, while the rights under TRIPS are considered private, also in reference to biological resources related to patents. The conflict arising from this aspect lies in the fact that, although States

⁴⁵⁹ United Nations Environmental Programme, *Convention on Biological Diversity*, Rio de Janeiro, June 5th, 1992 available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

⁴⁶⁰ J. CURCI, *The New Challenges to the International Patentability of Biotechnology: Legal Relations Between the WTO Treaty on Trade- Related Aspects of Intellectual Property Rights and the Convention on Biological Diversity*, Brigham Young University International Law & Management Review, Vol. 2, Issue 1, Article 2, December 20th, 2015, p. 4, available at <https://digitalcommons.law.byu.edu/ilmr/vol2/iss1/2>

⁴⁶¹ GRAIN: <https://www.grain.org/article/entries/20-trips-versus-cbd>

⁴⁶² *Ibid.*

⁴⁶³ *Ibid.*

following CBD provisions have the right to prohibit the issuing of private IPR on life forms such as biological resources, the TRIPS provisions overlook this detail by requiring IPRs on micro-organisms and micro-biological processes, as well as patent protection or a sui-generis protection system on plant varieties⁴⁶⁴. The second feature under which CBD and TRIPS are in conflict, refers to benefit sharing. It is well established that the use and access of GR under the CBD calls for the equal sharing of benefits, while the TRIPS allow for the granting of patents in the field of technology including biological resources, though providing no mechanism for the sharing of benefits⁴⁶⁵.

The third conflict regards access to GR and PIC. The CBD, and especially the Nagoya Protocol, requires that access to GR be subsequent to prior informed consent of the State of origin, as well as it calls for the involvement and approval of indigenous communities involved. The TRIPS do not mention nor require PIC for access to those biological resources, which may be protected by a patent. Interestingly, in this particular aspect, both GRAIN and Curci find the beginning of biopiracy. As a matter of fact, they both state: “*CBD gives states legal authority to diminish the incidence of biopiracy by requiring prior informed consent. TRIPS ignores this authority and thus promotes biopiracy.*”⁴⁶⁶. The last alleged conflict refers to the broad underlying scopes of the two treaties: the CBD invites States to promote and encourage the conservation and sustainable use of biodiversity as a common concern of humankind, while TRIPS encourages the safeguarding of private interests and rights, also in regard to public health. Therefore, the CBD places the common good over private property and interests, while according to the TRIPS system, the exact opposite is guaranteed⁴⁶⁷.

Another very interesting feature lies in the causes that Curci, for instance, attributes to this form of incompatibility. The author stated that from a strict international law perspective, the incompatibility between the two treaties does not exist. As a matter of fact, the Vienna Convention on the Law of Treaties specifically states that since the TRIPS entered into force after the CBD, it will prevail over the CBD. Nonetheless, since the provisions present fundamental differences, even though some connections have been established, the two can be easily implemented simultaneously. The two treaties, according to Curci, are not necessarily mutually exclusive⁴⁶⁸. According to the author therefore, aside from the already mentioned legal incompatibilities, the further alleged inconsistencies can be conceived more as moral and political incompatibilities, stemming from the opposing perspectives of North and South, and also the imbalances between the two. Moreover, the integration of the core principles and objectives of the two is

⁴⁶⁴ GRAIN: <https://www.grain.org/article/entries/20-trips-versus-cbd>

⁴⁶⁵ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 61.

⁴⁶⁶ *Ibid.*

⁴⁶⁷ GRAIN: <https://www.grain.org/article/entries/20-trips-versus-cbd>

⁴⁶⁸ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 55.

quite difficult, thus allowing more easily the development of biopiracy⁴⁶⁹. Furthermore, the CBD promotes and encourages the cooperation of the States to properly achieve the conservation of biodiversity, thus allocating responsibilities to them, while the TRIPS does the exact opposite, as it does not impose any responsibility to those who own the rights related to the resources. Moreover, the lack of protection of TK in the TRIPS has been criticised by many, as it leads to its misappropriation, which again is one of the fundamental features of biopiracy⁴⁷⁰.

Nonetheless, GRAIN proposed a set of solutions in order to avoid said incompatibilities and establish a strong system aimed also at redressing biopiracy. First and foremost, since the CBD protects and enhances a much broader concept, which is the protection and survival of humanity, the TRIPS agenda should be rethought in the light of CBD's provisions, in order to make sure that its too narrow and limited agenda will not undermine the objectives of the CBD⁴⁷¹. More precisely, GRAIN calls for three specific measures: the recognition of the primacy of the CBD over TRIPS on the matter of biodiversity and traditional knowledge, the revision and rethinking of the TRIPS agenda in order to allow sovereign States to exclude not only GR, but all life forms, and TK from patentability, and lastly, the recognition and protection of the *a priori* collective rights of indigenous people, over their TK and GR⁴⁷².

To conclude, there is evidence of the fact that inconsistencies between TRIPS and CBD might arise under different standpoints: the legal, political and moral ones. Moreover, there is evidence that said incompatibilities allow for the development of biopiracy, by undermining the system, which could prevent it, although, not created to redress it. The legal system could be a powerful instrument for the control and suppression of biopiracy, but at this moment it is not strong enough, and has too many loopholes, facilitating the emergence and development of biopiracy⁴⁷³. The solutions proposed by GRAIN could be an effective means in the strengthening of the international system and the fight against biopiracy, although as it was already mentioned, the international system yet lacks the willingness and awareness on the actual threat imposed by the issue, consequently lacking effective means to redress it. Moreover, due to the multi-faced aspects which biopiracy consists of, and the fact that it is also a cultural phenomenon, the lack of interests towards other cultures is also a great hindrance to its solution.

⁴⁶⁹ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 58.

⁴⁷⁰ *Ibid.* p. 60.

⁴⁷¹ GRAIN: <https://www.grain.org/article/entries/20-trips-versus-cbd>

⁴⁷² *Ibid.*

⁴⁷³ *Ibid.*

5. Existing instruments concerning Human Rights and Cultural Rights

The value that human rights have gathered since their drafting is undeniable, although, as stated in the introduction to this dissertation, they have not been immediately recognised that fundamental value, from the beginning. Nonetheless, accounts of human rights violations and denials still appear nowadays, and have been widely documented both by NGOs, International Organizations and UN Agencies. Human rights are enshrined in three main documents: the Universal Declaration of Human Rights (UDHR) and following Covenants, namely the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR), whose importance and significance will be analysed in the following chapter. The Universal Declaration of Human Rights is a milestone in the drafting of fundamental human rights, and it is also a proof of the will of the international community to recognise standards applicable to all people⁴⁷⁴. The UDHR was the forerunner of those fundamental rights, which were later, drafted more in detail in the two following Covenants. The one that is most relevant for the context of this dissertation, is the ICESCR, which holds the fundamental second generation rights, and in particular cultural rights⁴⁷⁵.

Cultural rights mostly provide every individual with the possibility to access culture, but before going any further with the analysis of the different cultural rights, it might be important to consider the meaning of the concept of culture attached to it. According to UNESCO, culture can be interpreted both in a wide and in a very restricted sense: the former refers to culture as the sum of human activities, differentiating men from animals; while on the stricter sense, culture is connected to civilization, or what differentiates one people from another, allowing each and every own to have their own individual heritage⁴⁷⁶. In its 1970 report, within the Statement on Cultural Rights as Human Rights, culture is defined as the essence of human being: *“Culture is everything which enables man to be operative and active in his world, and to use all forms of expression more and more freely to establish communication among men”*⁴⁷⁷.

In that very same statement, UNESCO also underlined a crucial factor, which has been reiterated in many occasion in this dissertation: the present society imposes uniformity and impoverishment over cultural values, due to the increasing importance placed onto consumption and economic profit. Hence, even though uniformity can be regarded as desirable under an economic and development perspective, and since this kind of homogeneousness tends to be imposed by developed countries lacking to recognise the intrinsic value of culture, means and strategies should be found and implemented, in order to recognise the richness and value of every culture⁴⁷⁸. Furthermore, cultural heritage is essential in the development

⁴⁷⁴ <http://www.un.org/en/universal-declaration-human-rights/>

⁴⁷⁵ *Ibid.*

⁴⁷⁶ United Nations Educational, Scientific and Cultural Organization, *Cultural Rights as Human Rights – Studies and Documents on Cultural Policies*, Geneva, 1970, available at <http://unesdoc.unesco.org/images/0000/000011/001194eo.pdf>

⁴⁷⁷ *Ibid.* p. 105-106.

⁴⁷⁸ *Ibid.*

of personal identity as well as a sense of belonging to the community, fundamental for groups, which are usually isolated and exploited.

Janet Blake, who in several occasions served as Expert for UNESCO, divided culture into three main categories, in order to identify more clearly the core concept lying behind cultural rights. According to the author, culture can be firstly considered as “capital”, namely the accumulation of the material heritage of mankind as a whole; as “creativity” related to scientific and artistic creations; and lastly as an all-encompassing concept, the sum of all material and spiritual activities as well as the products which characterize a specific social group and differentiate it from others⁴⁷⁹. Therefore, as it can be deduced from both UNESCO and Blake theorizations, culture can be regarded in an encompassing sense or in a narrower one, though what emerges is that the value that culture has, is incalculable for people all over the world. Furthermore, culture is neither fixed nor static, but rather a dynamic and evolving concept permeated and embedded in peoples’ lives. Hence, the value attributed to cultural rights is equally fundamental. As a matter of fact, the Universal Declaration on Cultural Diversity of 2000, declared in Art. 5, that cultural rights are an integral part of human rights, thus establishing the connection between the two sets of rights in a written document at the international level and further reaffirming the universality, indivisibility and interdependency features of human rights⁴⁸⁰.

The first and broader cultural right is the right to take part in cultural life, enshrined firstly in Article 27 of the UDHR. Said article provides every individual with the opportunity to freely participate in the cultural life of their community and to appreciate both arts and scientific progress⁴⁸¹. The same features are restated in Article 15, paragraph 1 of the ICESCR. This article imposes upon States the duty to recognize to everyone the right to enjoy their own cultural life, and to benefit from scientific progress and its applications, as well as to benefit of the protection of moral and material interests deriving from any scientific, literary or artistic production⁴⁸². In her report, the former independent expert in the field of cultural rights Farida Shaheed highlights that the Committee on Economic, Social and Cultural Rights in its general comment No. 21, stressed that respecting and protecting the right to take part in cultural life, calls for specific measures in order to allow the enjoyment of such right both individually or collectively. Furthermore, the Comment draws attention also on the fact that this right is directly connected with access to cultural and linguistic heritage⁴⁸³. Interestingly enough, this particular right falls within the

⁴⁷⁹ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 288.

⁴⁸⁰ W. LOGAN, *Cultural diversity, cultural heritage and human rights: towards heritage management as human rights-based cultural practice*, London, International Journal of Heritage Studies, March 1st, 2012, p. 5/6.

⁴⁸¹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed: Copyright policy and the rights to science and culture*, A/HRC/28/57, December 24th, 2014, p. 4.

⁴⁸² United Nations General Assembly, *International Covenant on Economic, Social and Cultural Rights*, December 16th, 1966 available at <https://www.ohchr.org/en/professionalinterest/pages/cescr.aspx>

⁴⁸³ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 11.

category of freedoms: each individual can make the choice to either take part in cultural life, and choose a particular culture over the other, but also, significantly, they have the choice to refuse to do so⁴⁸⁴.

Furthermore, this particular right involves three main features that allow for its full enjoyment: participation, access and contribution to cultural life. Participation is intrinsically associated with freedom, as everyone has the right to act freely, and to choose between one culture over the other, as pointed out by the Committee on Economic, Social and Cultural Rights in its Comment No. 21⁴⁸⁵. Participation refers not only to the aforementioned choice, but also to the possibility of changing that choice at any moment, to engage in one's own cultural practice and to express them as well as to express oneself in a language of their choice. Access, on the other hand, is mostly related with education, or the possibility to access education systems in order to make an aware and well-educated choice over one's own culture. Moreover, informed choices call for a better understanding of one's own cultural practices and traditions, and allow individuals to develop a clearer cultural identity, since these notions are undoubtedly entangled⁴⁸⁶. Lastly, with regard to contribution, each individual has the right to actively engage in cultural life and to be involved in the creational process, be it either material, spiritual, intellectual and emotional forms of expression. This last aspect of the right to take part in cultural life is connected with the right to actively engage in the development of one's community.

To conclude, according to Blake, the full realization of the right to take part in cultural life can be only and fully achieved if a series of criteria are met: availability (of cultural goods), accessibility, acceptability (of laws, strategies and programmes adopted for the enjoyment of cultural rights), adaptability (of the abovementioned measures) and appropriateness, namely that human rights are respected and carried out in a way that is respectful also of cultural rights of specific groups, minorities and indigenous people⁴⁸⁷. To fulfil these conditions, the contribution of the State is fundamental: it has the duty to provide its citizens with an environment in which every individual has the possibility to participate in a culture of their choice, and to enact measures and policies which allow for the creation and preservation of said conditions, and thus for the enjoyment of the right itself⁴⁸⁸.

The right to enjoy one's own culture is another cultural right, strongly related to the first one mentioned. In particular, it is covered by Article 27 of the ICCPR, stating: "*In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language*"⁴⁸⁹. As noted by the former Independent Expert in the field of

⁴⁸⁴ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 299.

⁴⁸⁵ *Ibid.*, p. 299.

⁴⁸⁶ *Ibid.*, p. 300.

⁴⁸⁷ *Ibid.*

⁴⁸⁸ *Ibid.*

⁴⁸⁹ United Nations General Assembly, *International Covenant on Civil and Political Rights*, December 16th, 1966 available at <https://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx>

cultural rights, a similar provision is found in Article 30 of the Convention on the Rights to the Child, including both minorities and indigenous children⁴⁹⁰. As a matter of fact: “*In those States in which ethnic, religious or linguistic minorities or persons of indigenous origin exist, a child belonging to such a minority or who is indigenous shall not be denied the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practise his or her own religion, or to use his or her own language*”⁴⁹¹. Interestingly enough, Article 30 of the Convention on the Rights of the Child clears one aspect, which had received several critics with regard to Article 27 of the ICCPR, namely the inclusion of indigenous children as entitled to such right.

Fairly, the provisions of Article 27 have attracted some critics, especially because of the wording, which had been considered vague and not clear. For instance, a question rises, whether indigenous communities fall within the boundaries of minorities or not. The Human Rights Committee (HRC) in its General Comment 23 has tried to clear out the impasse, by stating that:

“The enjoyment of the rights to which article 27 relates does not prejudice the sovereignty and territorial integrity of a State party. At the same time, one or other aspect of the rights of individuals protected under that article - for example, to enjoy a particular culture - may consist in a way of life, which is closely associated with territory and use of its resources. This may particularly be true of members of indigenous communities constituting a minority.”⁴⁹²

Nonetheless, during the drafting of the Convention, several delegates representing indigenous communities, and precisely the Indians of North and Latin America and the Aborigines of Australia, had pointed out that indigenous people should not be regarded as minorities⁴⁹³. They held as their main argumentation the fact that they were (and still are), by all means, peoples entitled to the right of self-determination, as it was already asserted. Moreover, minorities and indigenous people, even though sharing some common traits, show two main differences, and precisely: indigenous communities are characterised by a prior settlement in a specific territory and by a spiritual and ancestral connection with those very same lands in which they have lived, characteristics which are not shared by minorities. Indeed, the peculiar relation that indigenous people have with their lands is regarded as vital for the enjoyment of their rights, in particular cultural ones, and most importantly, the preservation and

⁴⁹⁰ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 11.

⁴⁹¹ United Nations General Assembly, *Convention on the Rights of the Child*, September 2nd, 1990 available at <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>

⁴⁹² United Nations Human Rights Office of the High Commissioner, *Human Rights Committee, CCPR General Comment No. 23: Article 27 (Rights of Minorities)*, April 8th, 1994, paragraph 3.2.

⁴⁹³ A. YUPSANIS, *Article 27 of the ICCPR Revisited - The Right to Culture as a Normative Source for Minority / Indigenous Participatory Claims in the Case Law of the Human Rights Committee*, Hague Yearbook of International Law, Vol. 26, 2013, p. 373-374.

safeguarding of said lands is considered as a precondition for both their physical and cultural survival⁴⁹⁴. Another interesting difference further distancing indigenous people and minorities has to do with their rights. As a matter of fact, minority rights refer to individuals belonging to a minority group, thus they are individual rights. Indigenous people's rights on the other hand fall for the most part, under the category of collective rights, thus pertaining to a community as a whole⁴⁹⁵.

Having established all that, the conclusion, which can be inferred, is that indigenous rights are more extensive than minority rights. Nonetheless, even though differences between the two groups have been demonstrated, the two concepts often overlap. Therefore, it is commonly accepted and recognised, that indigenous people can invoke the rights of minorities for themselves, without being associated with the status of minorities. Consequently, indigenous people may invoke also the rights enshrined in Article 27 of the ICCPR, even though they are no minority at all⁴⁹⁶.

Lastly, before moving to the next right, I would like to mention two crucial factors. First of all, the right enshrined in Article 27 has to be recognised by States if a minority exists within their territory. This particular wording, "existence", has been cleared out by the HRC in General Comment No. 23, by stating that the existence has to be objectively demonstrated, and therefore is not directly linked to a form of recognition by the State. Therefore, if a minority were to exist on a given territory, non-recognition by the State does not dispense it from complying with the provisions of Article 27, which have to be recognised anyway⁴⁹⁷. Secondly, as pointed out by the former Independent Expert, the provisions of Article 27 do not mention cultural heritage specifically, though it seems clear that to fully enjoy the right granted by said article, individuals have to be granted access to cultural heritage, which is particularly relevant for this dissertation⁴⁹⁸.

The right to maintain, control, protect and develop cultural heritage is also worth mentioning, particularly for this dissertation. Both the United Nations Declaration on the Rights of Indigenous People and the ILO Convention No. 169 contain provisions relating to cultural heritage. This particular right is not precisely enshrined in human rights conventions, as for the first two, but it is directly connected to the previous one analysed: the enjoyment of culture is intrinsically and significantly connected with the enjoyment of cultural heritage. For instance, Article 5 of the ILO Convention clearly states that cultural and spiritual practices characterising indigenous people must be recognised and protected. Also Article 31 of the UNDRIP declares that indigenous people are entitled to the right to maintain, control and develop their

⁴⁹⁴ A. YUPSANIS, *Article 27 of the ICCPR Revisited - The Right to Culture as a Normative Source for Minority / Indigenous Participatory Claims in the Case Law of the Human Rights Committee*, Hague Yearbook of International Law, Vol. 26, 2013, p. 375.

⁴⁹⁵ *Ibid.* p. 376.

⁴⁹⁶ *Ibid.* p. 376-377.

⁴⁹⁷ *Ibid.* p. 365.

⁴⁹⁸ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 11.

cultural heritage⁴⁹⁹. Interestingly enough, the article states that indigenous people have also the right to maintain, control and develop intellectual property over such cultural heritage, as well as traditional knowledge and cultural expressions, therefore they have the right to develop intellectual property also over their intangible cultural heritage. Unfortunately, as it was already stated, the Declaration is not legally binding, though its wide recognition and consensus demonstrate the willingness to recognise to indigenous people these rights. Article 34 of the Declaration adds that the development of cultural heritage and traditions as well as practices, have to be carried out in compliance with international human rights standards⁵⁰⁰. The current Independent Expert in the field of cultural rights, Karima Bennoune, stated in one of her latest reports, that cultural heritage is an issue concerning universal human rights, as demonstrated by the right here analysed, which has to be viewed and interpreted therefore from a human rights perspective⁵⁰¹. It can be concluded, that cultural heritage, and particularly its access and enjoyment, is a human rights issue, which must not be undermined or pass unrecognised, as underlined by the Human Rights Council Resolution 33/20 of September 2016⁵⁰².

Moreover, cultural heritage is a fundamental feature for the enjoyment of other human rights, as agreed by both Independent Experts. For instance, the rights of self-determination, the right of peoples to freely pursue their cultural development and the right to dispose of their natural resources are clearly linked to cultural heritage. In this sense, tangible and intangible cultural heritage are closely connected. Furthermore, the right to freedom of expression, freedom of thought conscience and religion is essential for the development and control of cultural heritage, as well as the right to education is crucial in relation to cultural heritage and its conservation and access⁵⁰³. It is clear that the link between cultural rights and human rights is undeniable, as well as the human rights dimension of cultural heritage, which belong to all individuals, including indigenous people.

Lastly, the right of access to and enjoyment of cultural heritage, as it was already indicated, is clearly a human right. The Independent Expert in the field of cultural rights, Karima Bennoune, declared that cultural heritage is an issue, which demands for a holistic approach, therefore a human rights perspective is desirable when approaching this matter⁵⁰⁴. Access and enjoyment are interconnected concepts, as one implies the other. For instance, there can be no enjoyment without access first, as by all means their relations conveys the possibility of knowing and understanding better one's own culture. Having achieved that, access becomes easier for everyone. Interestingly enough, this particular right does not conceive

⁴⁹⁹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 12.

⁵⁰⁰ *Ibid.*

⁵⁰¹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Karima Bennoune: Cultural Rights*, A/71/317, August 9th, 2016, p. 4/5.

⁵⁰² <https://en.unesco.org/news/karima-bennoune-cultural-heritage-human-rights-issue>

⁵⁰³ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 13.

⁵⁰⁴ <https://en.unesco.org/news/karima-bennoune-cultural-heritage-human-rights-issue>

right-holders as mere viewers or users, but as active participants and creators in the process of interpretation and development of cultural heritage, as well as in its safeguarding and preservation⁵⁰⁵. Although not clearly enshrined in any international legally binding document, according to the former Independent Expert Farida Shaheed, the concept of access to cultural heritage has been developed thoroughly by the Committee on Economic, Social and Cultural Rights, stating that access in this particular context refers to: physical access to cultural heritage, not only to sites and museums, but also to information and technology related to it; economic access, namely that access should be affordable to all; information access, which is twofold, in the sense that individuals should be allowed to easily seek and receive information but also to transmit said information to others; and lastly access to decision-making and monitoring, fundamental features to fully enjoy the right by being able to monitor, safeguard and preserve their own cultural heritage⁵⁰⁶. Furthermore, as far as right-holders are concerned, it is clearly recognised that the right of access and enjoyment of cultural heritage must be considered both as an individual as well as a collective right. Moreover, according to the former Independent Expert: “*In the case of indigenous peoples, this also stems from the Declaration on the Rights of Indigenous Peoples*”⁵⁰⁷. Thus, indigenous people are clearly entitled to this particular right, both individually and collectively. In conclusion, the clear connection between human rights and cultural rights has been established. Cultural rights are in fact human rights, and can be found in many forms: as access to culture or cultural heritage, as preservation and safeguarding, but also as active and creative participation. A particular provision should be born in mind, and precisely that indigenous people have the right to develop intellectual property over their culture and cultural heritage, a fundamental feature for this dissertation. Developing intellectual property oriented towards human rights is strictly connected to the enjoyment of those rights, as well as to the access and safeguard of their own culture and cultural heritage.

⁵⁰⁵ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights, Farida Shaheed*, A/HRC/17/38, March 21st, 2011, p. 15.

⁵⁰⁶ *Ibid.* p. 16.

⁵⁰⁷ *Ibid.*

5.1 The Universal Declaration of Human Rights and the International Covenants

The Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights, alongside the two optional Protocols constitute the International Bill of Rights. The UDHR was the first one to be drafted, and it is recognised as the foundation of international human rights law. The issue of human rights had emerged though even before the drafting of the UDHR, and precisely in the Covenant of the League of Nations. Nonetheless, the need for a universally recognised document was expressed during the San Francisco Conference of 1945, establishing the birth of the United Nations through the adoption of the Charter of the United Nations⁵⁰⁸. Such need was surely prompted by the horrors that the world had witnessed during World War II and the Holocaust, as a promise to the whole world not to repeat the same mistakes, and a sign of hope.

During the San Francisco Conference, while drafting the Charter of the United Nations, a proposal for a declaration enshrining human rights was formed, although postponed since there would not have been enough time to deal with the issue properly. The Charter of the United Nations states at Article 1, paragraph 3:

“To achieve international cooperation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion⁵⁰⁹”

The article clearly states the UN commitment towards human rights. Since there was not enough time to cover the issue of human rights properly, the Preparatory Commission of the United Nations met immediately after the closing of the San Francisco Conference. The Commission specifically tasked the Economic and Social Council with the establishment of an ad-hoc commission for the promotion of human rights, and so the Commission on Human Rights was born in 1946. The Drafting Committee decided to draft the human rights standards in two forms: a declaration, which would set forth the standards and a convention, which would list the specific rights⁵¹⁰. As a matter of fact, the UDHR declares and enlists the basic freedoms and rights such as life, liberty, security and access to justice, as well as freedom from torture and slavery. It declares also freedom of thought, religion and expression, as well as the freedom to manifest them.

Interesting for this dissertation, is the relevance of Article 27, stating that individuals are entitled to freely

⁵⁰⁸ United Nations Office of the High Commissioner for Human Rights, *Fact Sheet No. 2: The International Bill of Human Rights*, Geneva, June 1996, available at <https://www.ohchr.org/Documents/Publications/FactSheet2Rev.1en.pdf>

⁵⁰⁹ United Nations, *Charter of the United Nations*, San Francisco, 1945.

⁵¹⁰ United Nations Office of the High Commissioner for Human Rights, *Fact Sheet No. 2: The International Bill of Human Rights*, Geneva, June 1996, available at <https://www.ohchr.org/Documents/Publications/FactSheet2Rev.1en.pdf>

participate in cultural life, as well as enjoy arts and the benefits of scientific advancements, thus including the idea that cultural rights are an aspect of human rights, even though the provisions were not clear enough with regard to relationship between individuals, communities and States⁵¹¹. The drafting process of the UDHR took almost two years. The Drafting Committee transmitted to the Commission on Human Rights draft articles, and decided to establish three working groups: one in charge of the declaration, one in charge of the covenant and one for the implementation of said documents. The draft declaration was then revised during the third session of the Commission, when Governments were asked to comment on the proposed articles⁵¹². Finally, in 1948, the Economic and Social Council submitted the final draft to the General Assembly meeting in Paris, which by Resolution 217 A (III) adopted the Universal Declaration of Human Rights on December 10th, 1948. It is commonly recognised, that the UDHR is the most accomplished and far-reaching declaration that the UN has ever drafted, a document upon which all other human rights related instruments have been modelled. It has set standards of achievement, guidelines and a shared philosophy, as well as openly stating the international community's commitment towards human rights⁵¹³.

On the same day that the Declaration was adopted, the UNGA asked the Drafting Committee to prepare a covenant dealing with human rights and their implementation and to consider these issues as priorities. Based on the comments received from the Governments, the Drafting Committee started to work on a draft covenant and on the first eighteen articles, which were then submitted to the Commission for revision in 1950. On that very same year though, the UNGA declared the necessary correlation between the enjoyment of civil and political right and that of economic, social and cultural rights, thus asking the Commission to include the latter in the covenant⁵¹⁴. This decision, namely to separate the two groups of rights, was based mostly on four reasons: first of all, it would have been easier for some states to ratify the two documents in two separate moments, thus fastening the process for some countries; secondly, the nature of those rights are fairly different: political and civil rights are seen as priorities which should be given effect promptly, while economic, social and cultural rights are perceived more as goals to achieve in a longer period⁵¹⁵. Thirdly, since the nature of the rights is different, also the path followed in order to achieve them will be divergent; lastly, compliant procedure were considered surely applicable for the first set of rights, namely the civil and political ones, though not for the latter⁵¹⁶.

The Drafting Committee dedicated almost two years, between 1951 and 1952, to the drafting of what were now two separate covenants, on request of the UNGA. The Committee again asked for comments by

⁵¹¹ H. SILVERMAN and D. FAIRCHILD RUGGLES, *Cultural Heritage and Human Rights*, New York, Springer, 2007, p. 4.

⁵¹² United Nations Office of the High Commissioner for Human Rights, *Fact Sheet No. 2: The International Bill of Human Rights*, Geneva, June 1996, available at <https://www.ohchr.org/Documents/Publications/FactSheet2Rev.1.en.pdf>

⁵¹³ *Ibid.*

⁵¹⁴ *Ibid.*

⁵¹⁵ J. SIMSARIAN, *Progress in Drafting Two Covenants on Human Rights in the United Nations*, *The American Journal of International Law*, Vol. 46, No. 4, Cambridge University Press, October 1952, p. 710-711.

⁵¹⁶ *Ibid.* p. 711.

Governments, but also by UN Special Agencies, which once submitted were revised and helped the drafting process. The two drafts were finally completed between the Commissions' ninth and tenth sessions, between 1953 and 1954. In 1955 an article-by-article discussion was promoted, so that the texts might have the widest consensus among States, and although the discussion began as scheduled, the two documents were only finally completed in 1966⁵¹⁷.

The preambles of the two Covenants, as well as Articles 1, 3 and 5 are almost identical. Both preambles restate the commitment to and importance of human rights, while Article 1 in both documents declare that self-determination is a universal right and States have the duty to respect and promote it. Article 3 reaffirms the equality between men and women in the enjoyment of human rights, while Article 5 provides protection against undue limitations and the safeguarding of all human rights: States cannot limit nor hinder human rights of any individual⁵¹⁸. As a matter of fact, certain rights can never be limited or suspended, not even in emergency situations, namely the rights to life, and fundamental freedoms such as freedom from torture and enslavement, freedom from retroactivity as well as freedom of thought and religion. The ICCPR allows States to suspend or limit the enjoyment of some rights nonetheless, only in situations in which the life of the nation is threatened, or in emergency situations, though never on the grounds of discriminations based on sex, race, language, religion or social extraction⁵¹⁹.

The ICCPR, or the International Covenant on Civil and Political Rights, protects fundamental rights such as the right to life, and protection against torture, slavery and arbitrary arrest as well as access to justice and tribunals, and equality before the law. Furthermore, it demands prohibition of any war propaganda, or publicity based on racial hatred or violence; it asks for the protection of the rights of children and establishes the right to vote and as it was already stated, by Article 27, it restates the right to culture of minorities and also indigenous people, according to the argumentations mentioned in the previous chapter. The ICESCR, or the International Covenant on Economic, Social and Cultural Rights, is concerned with employment, working conditions and trade unions, social security, and provisions related to the family, namely motherhood and children's rights, health and science and culture. More precisely, Article 15 declares the right of every individual to take part in cultural life, as it was explained in the previous chapter and particularly relevant for this dissertation, as it includes also indigenous people.

To conclude, I would like to focus on the importance of such documents for indigenous people. The United Nations have had a central role in the development of international human rights law, as well as in the recognition of indigenous people's conditions and rights. UN bodies such as the Human Rights Body and the Working Group on Indigenous People or the United Nations Permanent Forum on Indigenous Issues have been central actors in reversing the condition of exclusion in which indigenous people lived,

⁵¹⁷ United Nations Office of the High Commissioner for Human Rights, *Fact Sheet No. 2: The International Bill of Human Rights*, Geneva, June 1996, available at <https://www.ohchr.org/Documents/Publications/FactSheet2Rev.1.en.pdf>

⁵¹⁸ *Ibid.*

⁵¹⁹ *Ibid.*

through the development of a human rights system. Nonetheless, the implementation of these rights is far from being impeccable. Particularly, human rights issues, which mostly concern indigenous people, derive from exploitation of their lands and resources⁵²⁰. On the other hand, this system has allowed for an unprecedented access to human rights and international forums, being finally able to influence decisions involving them directly and indirectly. Most of all, cultural distinctiveness has been recognised at the international level as one of the fundamental traits characterising indigenous people, thus reinforcing the role that culture plays for these communities⁵²¹. It could be therefore stated, that the fundamental role played by these documents, but mostly, by the mechanisms and system that they have created, has had enormous contributions for indigenous people. Recognising the conditions of those communities, and granting them universal rights, though always bearing in mind their peculiar situation and history, was possible also thanks to the philosophy inspired by universal human rights and the aforementioned documents.

⁵²⁰ United Nations Office of the High Commissioner for Human Rights, *Indigenous Peoples and the United Nations Human Rights System: Fact Sheet No. 9/Rev. 2*, New York and Geneva, 2013, p. 4.

⁵²¹ *Ibid.*

5.2 Intangible Cultural Heritage

Chapter 5 of this section has pointed out the underlying and existing relation between human rights and cultural heritage. Indeed, cultural heritage in its two main forms, tangible and intangible, has many implications related to human rights issues, and the one different form entails different and complex relations with human rights. According to Logan: “*Managing intangible heritage has the most direct and difficult human rights implications because we are dealing with embodied and living heritage. It is ethically impossible to ‘own’ people in the way that we can own, buy and sell, destroy, rebuild or preserve the tangible heritage of places and artefacts*”⁵²². The intricate and fragile nature of intangible cultural heritage is a well-established matter, as it has been recognised by many international organizations, especially UNESCO as well as experts all over the world.

Providing a clear and recognised definition of what intangible cultural heritage (ICH) is has been a complex and quite recent process, involving several steps and work. In this regard, the efforts of UNESCO have been crucial, since from its creation in 1949 their actions have been directed towards the understanding of the different layers and complexities, which constitute culture. Indeed, the recognition of intangible heritage as a value to be preserved is a recent development, as well as its recognition as a human rights issue altogether⁵²³. The value attributed to ICH cannot simply be isolated to the cultural field, since also the social and intellectual context play an important role. Moreover, especially with regard to traditional knowledge and resources, also an economic value can be attributed to ICH. Nonetheless, to restate the words of Logan, it is difficult to deal with ICH, since it covers living and intangible matters⁵²⁴.

Recognising the strong and deep values of culture has been the funding core of UNESCO and its activities, and one of its central aims has been that of identifying and later codifying a definition encompassing the different features of cultural heritage. As a matter of fact, from the very beginning the organization has engaged in the creation of a normative regime surrounding cultural heritage, although at first the most pressing issue, after having witnessed the horrors of World War II and the destruction of so many cities and heritage sites, was thus to ensure the protection of tangible cultural heritage⁵²⁵. Furthermore, States from all over the world have started to admit the need for recognition of intangible cultural heritage since for some countries oral and traditional forms of culture constitute the majority of their cultural heritage, which is also an important social and economic source. Indeed, as it was already explained, the livelihoods of many indigenous communities or minority groups are based upon their knowledge and traditional forms of expression, thus the recognition of these features as ICH allows for

⁵²² W. LOGAN, *Cultural diversity, cultural heritage and human rights: towards heritage management as human rights-based cultural practice*, London, International Journal of Heritage Studies, March 1st, 2012, p. 6.

⁵²³ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 151.

⁵²⁴ UNESCO, *What is Intangible Cultural Heritage*: <https://ich.unesco.org/doc/src/01851-EN.pdf>

⁵²⁵ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 151-152.

protection and safeguarding⁵²⁶.

The inclusion of the concept intangible heritage in legal documents came later, as in the 1972 World Heritage Convention (WHC) the only forms of heritage recognised are cultural heritage and natural heritage. Interestingly, the document does not mention any distinction between tangible and intangible heritage, as it only makes reference to cultural heritage as a whole, although as it will be demonstrated, the definition provided in the WHC describes tangible CH⁵²⁷. Such distinction has been debated in many occasions, and has yet received some criticism, especially by indigenous people, who claimed that a separation between the two concepts was rather arbitrary and artificial. This can be easily explained by the strong and deep bond, that ties together indigenous people, their traditions and rights with their own lands⁵²⁸. The process of reaching a definition of intangible heritage, separated from tangible heritage, has covered almost three decades, since the first time that intangible heritage has been codified was in the UNESCO 2003 Convention for the Safeguarding of Intangible Cultural Heritage, where a general definition is provided and the five main domains of ICH are described. Interestingly, the definition does not provide any list of elements of CH, thus rendering the definition broader in its scope and avoiding the dangers of limitations⁵²⁹.

Article 2, paragraph 1 of the UNESCO 2003 Convention provides the following definition:

“The “intangible cultural heritage” means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. For the purposes of this Convention, consideration will be given solely to such intangible cultural heritage as is compatible with existing international human rights instruments, as well as with the requirements of mutual respect among communities, groups and individuals, and of sustainable development.⁵³⁰”

While at paragraph 2, it provides the five domains in which ICH manifests itself: “*oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe;*

⁵²⁶ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 151-152.

⁵²⁷ United Nations Educational, Scientific and Cultural Organization, *World Heritage Convention*, Paris, November 16th, 1972.

⁵²⁸ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 153.

⁵²⁹ *Ibid.*

⁵³⁰ United Nations Educational, Scientific and Cultural Organization, *Convention for the Safeguarding of the Intangible Cultural Heritage*, Paris, October 17th, 2003 available at <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>

*traditional craftsmanship*⁵³¹. As it can be clearly read, communities are at the heart of the definition, not only as the main bearers of ICH but also as mediators, in the process of deciding what such be regarded as such. This demonstrates the interest and shift towards individuals and the value of their knowledge, practices and traditions, although Article 15 of the same Convention restates that the State is ultimately in charge of ensuring the widest participation to all individuals, as well as to be involved, and the ability to maintain and control their heritage⁵³². The focus on communities stems from a particular intuition, namely that social development runs in parallel with cultural development. Particularly, the value of indigenous heritage as well as their culture has an intrinsic and undeniable connection with their way of living and society, which provide significant contributions to communities' development⁵³³.

The complex yet fragile nature of intangible cultural heritage is a feature, which needs to be preserved in order to promote and maintain cultural diversity in an ever more globalizing world. Understanding and appreciating the different heritages, which contribute to the uniqueness of each community, fosters and enhances intercultural dialogue as well as mutual respect⁵³⁴. Worth noticing, is the fact that the fundamental importance of ICH is not the cultural manifestation in itself, though rather the amount of knowledge and skills that constitute it and that are passed on from generation to generation. Nonetheless, this must not lead us into the false belief, that ICH is a rather fixed concept: on the contrary, it is evolving and adapting to times, and enriched by the new generations. To be preserved, it must be carried on and practised, as well as nurtured, though at the basis there must be a deep and respectful understanding of others' cultures⁵³⁵.

I would like now to linger onto the features of ICH, which must be born in mind, before moving to the next part of the chapter, namely ICH and indigenous people. Intangible heritage is, first and foremost, an evolving element: it is traditional and contemporary at the same time, in the sense that it does not only represent traditional and old rituals or practices, but also contemporary ones which have been added by the following generations, and that have also integrated urban, or rural uses⁵³⁶. ICH evolves and responds to environmental changes, it is a living form of heritage, though nonetheless it is characterised by some sort of continuity, which provides a sense of cultural identity and belonging. Therefore, another feature of ICH is inclusiveness, not only amongst people who share the same heritage, but also amongst other communities, neighbouring or not, who through cultural dialogue find similar traits and practices shared between different ICH. Furthermore, it is also representative but not exclusive. It depends from those people who practice and promote it, and from the transmission from generation to generation: as

⁵³¹ United Nations Educational, Scientific and Cultural Organization, *Convention for the Safeguarding of the Intangible Cultural Heritage*, Paris, October 17th, 2003 available at <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>

⁵³² S. LABADI, *UNESCO, Cultural Heritage and Outstanding Universal Value*, Lanham, AltaMira Press, 2013, p. 133.

⁵³³ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 156.

⁵³⁴ United Nations Educational, Scientific and Cultural Organization, *What is Intangible Cultural Heritage?*, available at <https://ich.unesco.org/doc/src/01851-EN.pdf>

⁵³⁵ *Ibid.*

⁵³⁶ *Ibid.*

mentioned above, it contributes to the promotion of a sense of cultural identity and belonging. Last but not least, ICH is community-based: its intrinsic value and nature as heritage can only be recognised as such by those communities or individuals, who create, promote and share it⁵³⁷. Therefore, it could be stated, that cultural heritage is also a choice: communities choose what should be regarded and safeguarded as their heritage, and what should not.

In this last part of the chapter, I would like to shift back the focus on the purpose of this dissertation, namely addressing the issue of biopiracy as a human rights violation. Having established that cultural heritage is a human right, and being ICH a fundamental component of CH, I would like to concentrate on why intangible heritage is so fundamental to indigenous people, as well as the clear connection between ICH and traditional knowledge, which as stated at the beginning of this dissertation, is a feature necessarily involved when it comes to biopiracy.

Traditional knowledge is not always indigenous as it was already cleared, though clearly both traditional knowledge and indigenous heritage are elements of ICH, as they are both orally transmitted, though sometimes the two concepts do overlap. According to UNESCO, indigenous people are repositories of most of the world's cultural diversity; nonetheless, the only reference to indigenous People in the 2003 Convention is laid out in paragraph 7 of the Preamble, stating that: "*communities, in particular indigenous communities, groups and, in some cases, individuals, play an important role in the production, safeguarding, maintenance and re-creation of the intangible cultural heritage, thus helping to enrich cultural diversity and human creativity*"⁵³⁸, thus declaring once again the central role played by indigenous communities when it comes to ICH, and the clear and deep connection that the two notions hold. According to Blake, it is clear that in order to safeguard cultural heritage, first and foremost the rights of its main repositories must be protected and ensured, as the link connecting the two is undeniable⁵³⁹. I would like to focus the attention on the fact Blake does not limit heritage to the intangible one, when indigenous people are involved, but rather it refers to cultural heritage as a whole. It was already stated, that indigenous groups tended to refuse the separation between tangible and intangible heritage, as well as between cultural and natural heritage, since for them, heritage is a much broader notion encompassing altogether cultural and natural heritage, tangible and intangible⁵⁴⁰. As it was cleared by UNDRIP, heritage cannot be separated from land rights, and most importantly from control over natural resources, a notion that is fundamental for the aim of this dissertation. Also Zagato stresses that indigenous people deserve and must be assured special treatment, due to the marginalization and even extermination that they have suffered in the past, with regard to their natural heritage, their knowledge

⁵³⁷ United Nations Educational, Scientific and Cultural Organization, *What is Intangible Cultural Heritage?*, available at <https://ich.unesco.org/doc/src/01851-EN.pdf>

⁵³⁸ United Nations Educational, Scientific and Cultural Organization, *Convention for the Safeguarding of the Intangible Cultural Heritage*, Paris, October 17th, 2003 available at <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>

⁵³⁹ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 192.

⁵⁴⁰ *Ibid.* p. 280.

and sacred places: they must be assured access, control and respect of customary law and international law related to it⁵⁴¹.

Erica-Irene Daes, the Special Rapporteur of the United Nations Sub-Commission on the Promotion and Protection of Human Rights, was an excellent contributor to the cause of indigenous people and their heritage, elaborating a set of ten principles and guidelines for the protection of the heritage of indigenous people. The first three principles restate the role of indigenous communities as guardians of their culture and traditions, and that the effective protection of their heritage affects positively all humanity. Cultural diversity is at the basis of a respectful development of society⁵⁴². The fourth principle, states that international respect and foremost recognition of the value of indigenous heritage and of the value of transmission to future generations is essential for their full enjoyment of human rights, and demanded by human dignity. Moreover, Daes indicates that to be assured an effective protection, indigenous people must maintain control over the transmission of their culture and education as well as over the research conducted within their lands. Therefore, free and informed consent must be an essential precondition for any agreement involving the study, use and display of indigenous peoples' heritage⁵⁴³.

With regard to the guidelines, the first group listed within the report proclaims those definitions, which must be kept in mind when dealing with indigenous heritage. For instance, the first one describes what constitutes the heritage of indigenous people focusing mostly on the tangible aspects and to their intrinsic relation with the territory that the community has inhabited for generations. It also establishes the connection with future practices, stating that their heritage is constituted also by those practices, knowledge and works which will be developed by future generations based upon the already existing heritage. This clearly demonstrates the living and evolving nature of cultural heritage, which should never be regarded as a fixed concept⁵⁴⁴. The second definition outlines those elements constituting the heritage of indigenous people, which are more related to the intangible aspect, namely: all forms of artistic works, agricultural, scientific and technological knowledge and most importantly, the use of flora and fauna. Interestingly, not only flora and fauna constitute the heritage of indigenous communities, but also its peculiar use should be regarded as heritage, thus protected and safeguarded against misappropriations and exploitation⁵⁴⁵. The last definition concerns the owners of indigenous heritage, which may be the whole community or a particular family or clan, and states that traditional owners of indigenous heritage must be

⁵⁴¹ L. ZAGATO, *Intangible Cultural Heritage and Human Rights*, p. 29- 50, in T. SCOVAZZI, B. UBERTAZZI and L. ZAGATO, *Il patrimonio culturale intangibile nelle sue diverse dimensioni*, Giuffrè Editore, 2012, p. 35.

⁵⁴² Economic and Social Council Commission on Human Rights, Forty-seventh Session, *Final report of the Special Rapporteur, Mrs Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights: Protection of the Heritage of Indigenous People*, June 21st, 1995, p. 9.

⁵⁴³ *Ibid.*

⁵⁴⁴ *Ibid.* p. 10.

⁵⁴⁵ Economic and Social Council Commission on Human Rights, Forty-seventh Session, *Final report of the Special Rapporteur, Mrs Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights: Protection of the Heritage of Indigenous People*, June 21st, 1995, p. 9.

determined by taking into consideration indigenous customs, laws and practices.

Particularly relevant for this dissertation, are the guidelines set out for businesses and industries and researches and scholarly institutions. The guidelines provide these two groups with wide indications on how to properly engage with indigenous communities in order to avoid discrimination⁵⁴⁶. I would like to focus the attention mainly on two particular provisions, namely No. 35 and 43, which should be kept in mind before moving on to the last chapter:

“35. Researchers and scholarly institutions must refrain from engaging in any study of previously un-described species or cultivated varieties of plants, animals or microbes, or naturally occurring pharmaceuticals, without first obtaining satisfactory documentation that the specimens were acquired with the consent of the traditional owners.

[...]

43. Business and industry should refrain from employing scientists or scholars to acquire and record traditional knowledge or other heritage of indigenous peoples in violation of these guidelines.⁵⁴⁷”

Of course, the guidelines do not have a legally binding value, but they do demonstrate the need for a clear behavioural pattern when engaging with indigenous people. Particularly, these behaviours must be careful and respectful especially when the institutions engaged are easily eager to exploit indigenous people, their resources and knowledge. Indeed guideline No. 35 underlines the need for previous consent when dealing with living organisms constituting the heritage of indigenous people, while guideline No. 43 addresses businesses and industries who should avoid employing scientists or researchers to obtain indigenous knowledge in violation of the guidelines⁵⁴⁸. These guidelines provide indications for a possible solution of the problems related to biopiracy, by reaffirming the need for consent by the communities and avoiding discriminating practices, which easily result in misappropriations and exploitation.

The aim of this chapter has been that of underlying the importance and the deep and embedded relation that cultural heritage has with indigenous communities. Moreover, it was imperative to assert the connection between traditional knowledge and intangible cultural heritage. Although indigenous communities tend to refuse the separation between tangible and intangible heritage, internationally traditional knowledge is a component of intangible cultural heritage. By establishing this relation, and by affirming that TK falls into ICH, it means that the same rights concerning ICH must be extended to TK: the same protection granted to ICH must be assured to TK, and so the right to access and enjoyment. All

⁵⁴⁶ Economic and Social Council Commission on Human Rights, Forty-seventh Session, *Final report of the Special Rapporteur, Mrs Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights: Protection of the Heritage of Indigenous People*, June 21st, 1995, p. 9.

⁵⁴⁷ *Ibid.* p. 13.

⁵⁴⁸ *Ibid.*

these elements are crucial ones in trying to establish whether if biopiracy is an actual violation of human rights.

CHAPTER 4: THE HUMAN RIGHTS DIMENSION OF BIOPIRACY

1. Intellectual Property and Traditional Knowledge

The features of traditional knowledge have already been outlined, alongside with the need for its protection. At this point, after having analysed the most important aspects of intellectual property, an important matter appears, namely the issue of the protection of traditional knowledge under patents. Interestingly, Dutfield notes that while folklore tends to be listed within the boundaries of copyright law, traditional knowledge is more often discussed within patent law. Unfortunately, generally patent law is believed to be lacking when it comes to the protection of TK, and that it cannot provide promising solutions in this regard⁵⁴⁹. There are four main reasons to why patent law is considered not effective enough to provide the necessary protection to TK, according to Dutfield: first of all, traditional knowledge is a collective value, while patents are individual achievements; secondly, patents are granted on the basis of newness and discovery, while TK is based on tradition and ancient knowledge; patents descriptions and specifications have to be written in a technical way, which would be quite difficult to replicate in the case of TK; and lastly, applying and enforcing patents is extremely expensive⁵⁵⁰.

With regard to the first issue, the alleged incompatibility between patent protection and TK stems from the fact that the latter is usually conceived as owned by the community as a whole, and that TK is generated by that very same community who owns it, and further develops it; while in order to grant patent protection, an individual, be it an author or inventor or owner, must be identifiable. Nonetheless, it is quite paradoxical that a new and non-obvious modification of TK achieved by an individual, as it falls within the category of newness and discovery, can be subjected to patent protection⁵⁵¹. The third issue regards on the other hand, the fact that one of the criteria of patentability states that the invention must not be obvious to one skilled in the art, thus ruling out most of the TK from patentability. However, according to Dutfield, this argumentation could be widened also to Western scientific knowledge, which is equally non-patentable, thus making this particular issue not a valid objection to patent protection on TK⁵⁵².

Moreover, and this relates the third and fourth objections, if an indigenous community decided to apply for a patent to file the application and write the required technical description, this would result in a very likely expensive choice. Hiring an attorney, possible confrontations and litigations with corporate firms would require financial resources that many indigenous communities do not have, due to their lack of economic self-sufficiency. This could be regarded, as the main reason why many indigenous communities are reluctant to file patent applications, and why patent protection is not considered effective enough to

⁵⁴⁹ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 104.

⁵⁵⁰ *Ibid.*

⁵⁵¹ *Ibid.*

⁵⁵² *Ibid.*

safeguard and preserve TK⁵⁵³. The solutions proposed by Dutfield, in order to overcome the incompatibility between patents and traditional knowledge, are manifold, which the author refers to as genuine possibilities. A possible alternative to avoid the extremely expensive costs of filing a patent application could be that of sharing the ownership of the patents with those enterprises or companies interested in the knowledge, which would apply on behalf of the indigenous communities, as they do have the means and financial resources to do so⁵⁵⁴. An alternative possibility would be the application for a patent by companies and the communities named together as the inventors, thus generating rights, mostly of compensation, also for traditional communities. Nonetheless, these options could only be feasible, if a mutual feeling of trust existed, which is sometimes lacking from both sides⁵⁵⁵.

The notion that TK lacks the newness and innovation criteria to be eligible under patent protection has been recognised by many authors. For instance, TK should be in the form of an invention, thus sufficiently novel, and should not be exposed to the wider public prior to the moment of registration. Therefore, it is quite clear that TK is hardly eligible for patent protection according to the current IP system and rules⁵⁵⁶. A further issue related to the incompatibility between patents and TK, is the fact that patent protection is usually granted for a short period of time, thus neglecting one of the most important features of TK, which is continuity. As a matter of fact, UNDRIP recognised to indigenous people the right to maintain and control their own knowledge, as well as the ability to further develop it. Thus, a short-term protection would not be effective enough. Unfortunately, by looking at TK through the current IP system and rights, since it cannot be granted patent protection, it is available for everyone and for free, since it is part of public domain⁵⁵⁷.

It was previously stated, in the chapter dedicated to the incompatibility between the TRIPS and the CBD, that between the two international legal instruments there are actual inconsistencies, which were noted by many scholars after the adoption of the TRIPS. Interestingly, the Nagoya Protocol, which is the additional Protocol to the CBD entered into force after the adoption of the TRIPS, could have tried to solve said incompatibilities. Unfortunately though, during the negotiations, the Parties were mostly interested in tackling the aspects related to genetic resources, thus paying again less attention to TK. Consequently, they ended up establishing a system tackling TK, which is very similar to that of GR, leaving aside the fundamental differences between the two⁵⁵⁸.

Within the Protocol, two articles can be identified as somehow tackling the issue of IPR system related to TK, namely Articles 4 and 7. Article 4 is dedicated to the relationship between the Protocol and other

⁵⁵³ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 105.

⁵⁵⁴ *Ibid.*

⁵⁵⁵ *Ibid.*

⁵⁵⁶ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 113.

⁵⁵⁷ *Ibid.*

⁵⁵⁸ *Ibid.*

international agreements. The first paragraph states that the aim of the article is not that of creating a sort of hierarchy between the international agreements and most importantly, while the following paragraphs affirm that the Protocol does not intend to affect the Parties' rights and duties under other international agreements entered into force prior to the Protocol, provided that said rights and duties do not go against the scope and object of the Convention, namely the conservation and sustainable use of biodiversity⁵⁵⁹. The provisions of Article 4 allow Parties to enter other international agreements dealing with ABS, provided that they do not cause threats to biodiversity, thus going against the objective of the CBD, and that they do not render ineffective the ABS systems established under the Protocol⁵⁶⁰. Therefore, it could be stated that Article 4, and especially Paragraph 2, set some sort of limitations for future international agreements: the ABS system and PIC provision must be respected and enacted in order for Parties to be able to enter an international agreement concerning those issues. Always with regard to TK, these limitations are strengthened if interpreted in light of Article 7, which is dedicated to prior informed consent. As a matter of fact, Article 7 affirms that prior informed consent and approval of indigenous communities must always be met; therefore, if Parties wanted to enter an international agreement, they would still have to ensure that these provisions are enacted and respected⁵⁶¹.

Of course, some organizations representing the interests of indigenous people have expressed their concerns in regards to this particular issue, namely whether if patents and the IPRs system could provide effective protection to TK. For instance Third World Network, which is an NGO already described in the chapter dedicated to NGOs of this dissertation, drafted a booklet as the result of the "Workshop on Biodiversity, Traditional Knowledge and Rights of Indigenous People", which involved several organizations aside from Third World Network, such as for example the Tebtebba Foundation and GRAIN. In this report, the authors outlined the main conclusions of the workshop, which included also how indigenous people conceived and viewed the current IPRs protection system in reference to TK⁵⁶². According to them, the IPR system, and especially patents, cannot protect TK effectively enough for several reasons, such as for example the fact that the IPR system promoted by the TRIPS Agreement was born from Western views and interpretations of the world, which fundamentally differ from how indigenous people approach nature and the resources it provides them with⁵⁶³. Moreover, TK is conceived

⁵⁵⁹ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 114.

⁵⁶⁰ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

⁵⁶¹ T. GREIBER, S. PEÑA MORENO, M. ÅHRÉN, J. NIETO CARRASCO, E. CHEGE KAMAU, J. CABRERA MEDAGLIA, M. J. OLIVA, F. PERRON-WELCH, N. ALI and C. WILLIAMS, *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, Bonn, International Union for Conservation of Nature, 2012, p. 114.

⁵⁶² V. TAULI-CORPUZ, *Biodiversity, Traditional Knowledge and Rights of Indigenous People*, Penang, Jutaprint & Third World Network, 2003, p. I.

⁵⁶³ *Ibid.* p. 6.

more as a commodity by Western countries, suitable for commercialization and profit, while indigenous people cherish TK as a gift either from nature or their ancestors, creators and great spirits. Hence, these contrasting views show that not even the preconditions are similar, leading to an inevitable incompatibility⁵⁶⁴.

The report also restates the evidence identified also by Dutfield that TK is collectively held, or in some cases held by individuals but shared with communities through a complex system of regulations and customary norms. Moreover, patent protection is limited in terms of time, while TK is a dynamic concept, which is passed on from generation to generation, thus again proving the ineffective protection that patents would provide⁵⁶⁵. Several other reasons have been identified, for instance the fact that indigenous people already have a system of customary norms aimed at safeguarding and protecting their knowledge, which would inevitably be undermined by IPR system. Secondly, the IPR system, especially the one framed by the TRIPS Agreement, was not originally designed for the protection of TK, indeed, it was not even mentioned in the document, thus it cannot grant adequate protection⁵⁶⁶.

Lastly, again the high social and financial costs of the IP protection are addressed, since the costs for IP protection would be extremely high not only from a monetary perspective, but also from a social one, ranging from the theft of TK and biopiracy, to the undermining and destruction of indigenous people's cultures and ways of living. The report also addresses the issue of biopiracy as being intrinsically connected with the misappropriation and lack of protection of TK, as in many biopiracy cases not only GR are patented, but also the traditional knowledge associated to those resources, thus proving once again that the patenting of TK is far from ensuring protection and safeguarding, but is actually more likely to be a means undermining and endangering TK⁵⁶⁷.

In the chapter dedicated to TK, it was stated that one of the international organizations, which mostly dealt with TK, alongside UNESCO, is WIPO, which nonetheless tackled the issue of TK under the perspective of intellectual property. As a matter of fact the IGC, or Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, has concerned itself with the development of a set of draft documents, aimed at the protection of folklore and TK in relation with intellectual property. Interestingly, folklore and TK have been tackled separately, as the two issues raise specific and differentiated legal solutions and sets of policies according to the different countries, even though for some, these two concepts are complementary⁵⁶⁸. The fact that the IGC has been working on a specific document which addresses the protection of TK according to a new and differentiated set of

⁵⁶⁴ V. TAULI-CORPUZ, *Biodiversity, Traditional Knowledge and Rights of Indigenous People*, Penang, Jutaprint & Third World Network, 2003, p. 7.

⁵⁶⁵ *Ibid.*

⁵⁶⁶ *Ibid.* p. 9.

⁵⁶⁷ *Ibid.* p. 10-11.

⁵⁶⁸ WIPO'S website: https://www.wipo.int/tk/en/igc/draft_provisions.html

IP rules, might be considered as a proof of the fact that the current system of IPR is lacking so far, in regard to the protection and safeguarding of TK.

From the very first year of its creation in 2000, the IGC has proposed and carried out several sessions to discuss the controverted issue of TK. These discussions relied on comments, which were sent by representatives of indigenous people and local communities, as well as other interested parties. Interestingly, the first set of comments reached more than 200 pages. Based on those comments submitted, the IGC developed draft articles and provisions on TK, which were supposed to be the basis for a final legal draft⁵⁶⁹. Unfortunately, during the IGC sessions held in 2011, the draft was not eventually approved and discussions continued, since there were still some issues, which still needed to be untangled. To begin with, the definition of TK was, and still is, one of the most debated topics, and parties seem to be incapable of agreeing on an acceptable definition. Perhaps, one of the main reasons why an adequate definition is still lacking, is that TK is extremely complex as a concept, as it takes many forms according to the indigenous community it belongs to.

Moreover, there is still no consensus on what kind of protection to grant to TK, namely a positive protection, aimed at establishing a set of ad hoc IP rights and rules, such as patents, or defensive protection, aimed at preventing misappropriation of TK while granting patents⁵⁷⁰. Furthermore, forms of TK vary also due to the differences between Western and indigenous ideologies. The last reason, which is unfortunately holding back parties from adopting the draft articles, is the decision on whether to establish the document as legally binding or non-binding. Of course, developing countries and indigenous communities are lobbying for a binding agreement, while developed countries and especially the USA, recommend a non-binding instrument in the form of recommendations or model provisions, thus avoiding the duties that a treaty would enforce⁵⁷¹.

The draft articles for the protection on TK were lastly revised on August 31st, 2018. The Preamble restates several crucial elements: the importance of the UNDRIP, the variety and differences among indigenous communities, the role of customary norms of indigenous people as well as that played by IP rules, both in promoting the protection and transfer of TK, as economic development⁵⁷². Interestingly, Article 1 should deal with the use of terms, and the documents present four different alternatives for the definition of misappropriation, some more broad and some more detailed and accurate. Still no agreement seems to be in sight on this definition, as well as on that of protected TK. The following articles are dedicated to scope and objectives, subject matter and beneficiaries, which should be identified with indigenous peoples and

⁵⁶⁹ L. SCHULER, *Modern Age Protection: Protecting Indigenous Knowledge Through Intellectual Property Law*, Michigan State International Law Review, Volume 21, Issue 3, 2013, p. 771.

⁵⁷⁰ P. LAKSHMANAN and S. LAKSHMANAN, *Protecting Traditional Knowledge: Can Intellectual Property Rights help?*, *Anc. Sci.*, Volume 1, Issue 2, 2014, p. 40-41, available at <http://vripress.com/index.php/AS/article/view/152>

⁵⁷¹ L. SCHULER, *Modern Age Protection: Protecting Indigenous Knowledge Through Intellectual Property Law*, Michigan State International Law Review, Volume 21, Issue 3, 2013, p. 774.

⁵⁷² World Intellectual Property Organization, *The Protection of Traditional Knowledge: Draft Articles*, August 31st, 2018 available at https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_37/wipo_grtkf_ic_37_facilitators_text_tk_rev_2.pdf

local communities⁵⁷³. Article 5BIS, as it is called in the draft, is the one dedicated to the protection of TK, through the establishment of a system of databases, which is an instrument for the defensive protection of TK. These databases ought to be of three kinds: publicly available, for the sake of transparency; national TK databases only accessible for IP offices in order to prevent erroneous granting of patents; and lastly, non-public national TK databases, which would serve for the codification and conservation of TK and would only be accessible for the beneficiaries, namely indigenous and local communities. The following article, establishes sanctions and remedies, in case the rights contained in the draft were to be violated, although there is still disagreement on the matter⁵⁷⁴. Indeed, there is still quite some disagreement on whether to include a provision calling for the disclosure of origin or to avoid such requirement. Interestingly, one provision which has no alternatives, meaning it has been agreed upon by the majority, is the one concerning non-derogation, meaning that Article 14 ensures that no rights of indigenous or local communities whatsoever will be diminished or extinguished in the future by the provisions set forth within the document⁵⁷⁵.

The fact that WIPO is currently negotiating on a document aimed at tackling the protection of TK under an IP perspective, which was required by several countries, especially developing ones, which also gave voice to the concerns of indigenous communities, can be interpreted as a proof of the fact that TK protection under the current IPR and patent system is not effective enough. The fact that biopiracy cases are still happening, and unfortunately increasing, can also be considered as another sign of the fact that TK and patents do not match⁵⁷⁶. These draft provisions, once adopted, might be a possible compromise solution, though the documents, also the one concerning folklore, have been referred to as controversial. Sadly, few developed countries see advantages in establishing an effective protection system concerning TK, and are thus pushing for a final document in the form of recommendation or model provisions. At the same time, developing countries are sceptical that the document might ensure an adequate protection system, as they perceive IGC as an instrument deployed by developed countries to confine TK in a separated forum, far from the actual forums where IP rules and systems are dealt with⁵⁷⁷.

I would like to conclude this chapter, with the words of Vandana Shiva, which in some way summarise all the concerns and problems raised by patents in relation which traditional knowledge, focusing also on the fact that the patent system is quite ineffective also in regards to the protection of biodiversity:

⁵⁷³ World Intellectual Property Organization, *The Protection of Traditional Knowledge: Draft Articles*, August 31st, 2018 available at https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_37/wipo_grtkf_ic_37_facilitators_text_tk_rev_2.pdf

⁵⁷⁴ *Ibid.*

⁵⁷⁵ *Ibid.*

⁵⁷⁶ V. TAULI-CORPUZ, *Biodiversity, Traditional Knowledge and Rights of Indigenous People*, Penang, Jutaprint & Third World Network, 2003, p. 10-11.

⁵⁷⁷ G. DUTFIELD, *Protecting Traditional Knowledge: Pathways To The Future*, Geneva, International Centre for Trade and Sustainable Development (ICTSD), April 2006, p. 33.

“Does the patenting route protect indigenous knowledge? Protection of indigenous knowledge implies the continued availability and access to it by future generations in their everyday practices of health care and agriculture. If the economic organization that emerges on the basis of patents displaces the indigenous lifestyles and economic systems, indigenous knowledge is not being protected as a living heritage. If we recognize that the dominant economic system is at the root of the ecological crisis because it has failed to address the ecological value of natural resources, expanding the same economic system will not protect indigenous knowledge or biodiversity.⁵⁷⁸”

⁵⁷⁸ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 163.

2. Drawing conclusions: is biopiracy a violation of Human Rights?

The aim of this chapter is that of trying to connect all the elements, which have been analysed so far. In order to do so, it might be important to restate the salient features of biopiracy. As it was clearly affirmed in the chapter dedicated to biopiracy, there is no agreed upon legal definition. On the other hand, there are some definitions, proposed by many scholars, which propose an interpretation of the phenomenon by focusing the attention more on a specific aspect of biopiracy. The one which encompasses the concept more thoroughly, is the one provided by Pat Mooney, co-founder of RAFI and one of the firsts ever to address biopiracy. According to Mooney, biopiracy corresponds to the misappropriation either of GR and TK belonging to indigenous or local communities, by institutions who seek monopoly control through the granting of patents and intellectual property rights, over said knowledge and resources⁵⁷⁹. Thus, biopiracy consists of a form of misappropriation, or the theft of traditional knowledge held by indigenous people and of genetic resources. But what allows biopiracy to happen?

The previous chapter was dedicated to the relation between TK and patents, and specifically, if patents could actually provided sufficient protection to TK. As it was demonstrated nonetheless, the protection granted by patents is not sufficient enough for the protection of TK, due to several reasons. First of all, according to Shiva, they are more of a means for market control rather than protection and safeguarding, thus treating knowledge only as a commodity and underestimating its deep and rooted value for indigenous communities. “*IPRs exploit creativity while killing its very source*”, Shiva stated, thus patents are an insufficient mechanism to protect TK⁵⁸⁰. The lack of protection of TK is caused also by loopholes in the legal system, which allow for its misappropriation. It should be remembered that WIPO has been developing and drafting an ad hoc document for the protection of TK against misuse and misappropriation, which was strongly asked by Members of WIPO, as they deeply felt that the lack of protection of TK was extremely damaging this invaluable resource⁵⁸¹.

Shiva has recognised several other factors, which facilitate the emergence of biopiracy and more specifically the misappropriation of TK and GR, such as for example the privatization of said resources, the devaluation of traditional knowledge as mere commodity and not as deep and invaluable element constituting a fundamental part of intangible cultural heritage. As a matter of fact, the protection of indigenous and traditional knowledge, which would be provided under the patent system, does not protect TK as living and dynamic heritage⁵⁸². Moreover, the displacement of local rights and creation of monopoly rights, through IP protection, alongside an ineffective protection of TK and GR, are other

⁵⁷⁹ C. HAMILTON, *Intellectual Property Rights, The Bioeconomy and The Challenge Of Biopiracy*, Genomics, Science and Policy Online, Vol. 4, Nr. 3, ESRC Genomics Network, 2008, p. 2.

⁵⁸⁰ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 56.

⁵⁸¹ L. SCHULER, *Modern Age Protection: Protecting Indigenous Knowledge Through Intellectual Property Law*, Michigan State International Law Review, Volume 21, Issue 3, 2013, p. 774.

⁵⁸² V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 146.

considerable causes of biopiracy. It seems also that some TCNs, according to Shiva, do not care about indigenous rights and values at all, which is clearly an important precondition of biopiracy. With regard to GR, even though a system has been established internationally for the fair and equitable access and sharing of the benefits deriving from the resources, said system has had some faults. Equity, fairness and shared compensation need to be applied in a systematic way, in order to combat phenomena such as biopiracy, not only internationally but also at the domestic and local levels⁵⁸³.

I would like now to linger upon one of the causes for biopiracy proposed by Shiva, namely the fact that TK is not always viewed as part of intangible cultural heritage, thus carrying a deep and embedded cultural meaning, but merely as a commodity. As it was stated at the beginning of this dissertation, traditional knowledge usually mirrors the tradition and culture of a specific group, and although used sometimes interchangeably with indigenous knowledge, the latter is narrower, as referring to only indigenous groups and entailing both tangible and intangible aspects⁵⁸⁴. With regard to TK, a thorough definition has been hard to encounter, also it is generally referred to as the body of knowledge which includes several features, such as oral transmission, learning through first-hand experience, holistic approach, intuition rather than analysis and social conception. Thus, one of the constituting elements of traditional knowledge is oral transmission, which means that it is usually passed on orally from generation to generation⁵⁸⁵.

It is fair enough to state, that TK falls within the boundaries of intangible cultural heritage. As a matter of fact, the definition provided by the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage states that ICH includes knowledge and expressions, alongside with other fundamental features, and that these aspects are transmitted from generation to generation and recreated by communities and groups. Moreover, the Convention also identifies the five domains in which ICH manifests itself, including oral traditions and expressions, as well as knowledge and practices related to nature. Thus, traditional knowledge is a fundamental component of ICH⁵⁸⁶. ICH, alongside with tangible cultural heritage, constitutes cultural heritage. Therefore, when the right to access to and enjoyment of cultural heritage is referred to, it does entail both ICH and TCH. This right is clearly a human right falling under the category of cultural rights, which have been extensively explained before. As a matter of fact, the former Independent Expert in the field of cultural rights has in many occasions addressed this issue, and restated the fact that cultural rights are by all means human rights⁵⁸⁷. Thus, it is safe to say, that since

⁵⁸³ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 166.

⁵⁸⁴ R. C RÿSER, *Indigenous People and Traditional Knowledge*, Centre for World Indigenous Studies, Berkshire Publishing Company, 2011, available at http://www.academia.edu/841635/Indigenous_and_Traditional_Knowledge

⁵⁸⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 94.

⁵⁸⁶ United Nations Educational, Scientific and Cultural Organization, *Convention for the Safeguarding of the Intangible Cultural Heritage*, Paris, October 17th, 2003 available at <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>

⁵⁸⁷ UNESCO website: <https://en.unesco.org/news/karima-bennoune-cultural-heritage-human-rights-issue>

intangible cultural heritage is a feature of human rights, especially its access and enjoyment, then the access and enjoyment of traditional knowledge, by being a core aspect of ICH, is an issue covered by human rights.

In this part of the chapter, I would like to focus more in depth on the concept of violation of human rights. Unfortunately, again, there is no agreed upon legal definition of violation of human rights, but rather, sadly, loads of examples, such as for instance: the forced eviction from one's home, which is a violation of the right to housing; the systematic segregation of disabled children in schools, which violates the right to education, the contamination of water, undermining the right to health and the right to water, genocide, torture and so forth⁵⁸⁸.

Specifically, the Office of the High Commissioner for Human Rights has defined a violation of economic, social and cultural rights as occurring when a State fails in its obligations to ensure that said rights are enjoyed without discrimination, namely it fails its obligation to respect, protect and fulfil them⁵⁸⁹. As a matter of fact, in regards to human rights, hence to cultural rights as well, States have three main responsibilities or obligations, which are the obligation to respect, or refrain from interfering with the access and enjoyment of said rights; the obligation to protect, according to which States have to prevent third parties from interfering; and lastly, the obligation to fulfil, which imposes upon States the responsibility to put in place mechanisms and systems for the full realization of those rights⁵⁹⁰. The first two obligations are particularly relevant in regard to this dissertation.

Biopiracy consists of a form of misappropriation or theft of traditional knowledge and GR, though in this particular context, the focus should be on the misappropriation and theft of TK. Thus, the free exchange of ideas is turned into theft and piracy. Theft is therefore, a crucial element of biopiracy, as indigenous people are being deprived of their knowledge, in two ways: they are being denied and taken away their knowledge, thus they are denied access to it, as well as they are deprived of any benefit which might arise from its commercialization⁵⁹¹. Since TK, as it was already stated, is an element constituting ICH, and ICH is a part of CH, and they have been all recognised as human rights' issues, the theft of TK, could prevent the enjoyment of the right to access and enjoyment of cultural heritage. The erosion and misappropriation of TK have clearly repercussions in the human rights dimension. Therefore, since scholars do recognise that economic, social and cultural rights are in fact human rights, it can be stated beyond doubt, that biopiracy constitutes both an individual and a collective violation of the right to culture, and more precisely, the right to access to and enjoyment of cultural heritage. Thus, it can also be clearly stated that, since cultural rights are in fact human rights, biopiracy is, by all means, a violation of human rights⁵⁹².

⁵⁸⁸ OHCHR website: <https://www.ohchr.org/en/issues/escr/pages/whatareexamplesofviolationsofescr.aspx>

⁵⁸⁹ *Ibid.*

⁵⁹⁰ J. BLAKE, *International Cultural Heritage Law*, 1st edition, Oxford, Oxford University Press, 2015, p. 301.

⁵⁹¹ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 233.

⁵⁹² I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 189.

Another well-recognised fact is that cultural rights are entangled one with the other, thus the preclusion from the enjoyment of a peculiar right may hinder all the others as well. Furthermore, it is also clearly established that human rights are tightly connected; therefore, the undermining of cultural rights very often precludes the enjoyment also of economic and social rights, or other human rights more in general. As a matter of fact, according to Robinson, many authors have noted that misappropriations of TK often lead also to the deprivation of self-determination, as well as to political exclusion or oppression, thus many indigenous communities have witnessed their political and civil rights violated⁵⁹³. The violation of these rights very likely undermines also their cultural rights, as well as their own knowledge, culture and clearly, their identity and their future. According to the author indeed, the respect and promotion of basic human rights is fundamental, in helping indigenous communities to shape their own future and have the means to protect themselves, their culture and their knowledge⁵⁹⁴.

Nevertheless, why is it so important to assess whether if biopiracy is also a violation of human rights? Mgbeoji states that the human rights implications of biopiracy are mostly a sign of political weakness, rather than a proof of the lack of mechanisms aimed at the protection of human rights. Indeed, if States were actually interested in targeting human rights implications of biopiracy, they should rethink the whole system of protection of TK at the domestic level, thus raising questions and doubts in regards to patents, for instance⁵⁹⁵. The assessment of that fact that biopiracy is not only a misappropriation, but also a violation of human rights may lead States to rethink the whole approach towards the phenomenon, not only nationally but also internationally. Developing a human rights based approach towards biopiracy, means developing a human rights based approach also towards the protection of TK and GR, which may also lead to the enhancement of indigenous' customary norms, rights and human rights altogether. It is a responsibility falling upon States, to find the balance between human rights and for instance, patent protection, so as to make sure that neither TK, nor GR, nor even indigenous people suffer those lacks⁵⁹⁶. According to Robinson:

“In the context of traditional knowledge, there may be many cases in which oppressive forces, whether state, industry or otherwise, inhibit the ability to continue traditional practices or cause affront to the traditions and customs of these groups. Therefore, these sorts of rights-base approaches may provide important emancipatory or empowering effects where indigenous, minority or local groups seek them, and where states and external authorities allow them. With respect to various

⁵⁹³ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 39.

⁵⁹⁴ *Ibid.*

⁵⁹⁵ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 189.

⁵⁹⁶ *Ibid.*

forms of self-determination, a key challenge rests with the open-mindedness and resolve of national governments as well as the struggles of indigenous and local peoples.⁵⁹⁷”

Assessing the fact that biopiracy is a violation of human rights, allows for the development of human rights based approaches in regards to all the features that are affected by biopiracy, namely TK, GR and indigenous people. Thus, the protection of TK and GR, as well as the recognition of indigenous people’s rights, should be more human rights oriented. The fact that this phenomenon constitutes also a violation of human rights raises concerns over the dangers and threats that its development may entail. The fact that a criminal activity gives rise to human rights violations, should be considered alarming, as human rights are the fundamental basis, according to which societies and the humankind can prosper. Human rights violations exacerbate the dangerousness of an illicit activity, which should be considered even more deplorable when hindering human rights.

An argumentation has often been proposed when dealing with economic, social and cultural rights, namely that they are too vague and broad to be adjudicated. Nonetheless, this has been dismissed in many occasions by the Office of the High Commissioner for Human Rights, stating that it is becoming increasingly common for violations of social, economic and cultural rights to be adjudicated in from of regional and domestic courts⁵⁹⁸. This aspect lies on the hands of States, thus their importance as actors, which can actually operate in the event of biopiracy cases, since through their policies they have the means to address these violations, which would fall within their obligation to fulfil. Some courts have the means to assess whether if a State has respected their positive obligations in regards with economic, social and cultural rights, as well as if they have complied with their duties⁵⁹⁹.

To conclude, the aim of this chapter, and of this dissertation as a whole, was to assess whether if biopiracy can actually be considered a violation of human rights. It has been recognised, that it is not only the theft and misappropriation of traditional knowledge and genetic resources, but also a violation of individual and collective cultural rights, which are by all means human rights. The fact that cultural rights are the so-called second-generation rights should not be held as an argumentation undermining their importance as human rights. It should not be held as a reason to consider biopiracy less deplorable and reprehensible, but indeed as a reason worsening it.

⁵⁹⁷ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 40.

⁵⁹⁸ United Nations Office of the High Commissioner for Human Rights, *Human Rights: Handbook for Parliamentarians N° 26*, Courand et Associés, 2016, available at <https://www.ohchr.org/Documents/Publications/HandbookParliamentarians.pdf>

⁵⁹⁹ *Ibid.*

3. Possible solutions: how to redress the scourge of biopiracy

The previous chapter was dedicated to the issue of human rights in relation to biopiracy. It has been highlighted, that biopiracy is indeed a violation of human rights, as it hinders the cultural rights of indigenous people, which are prevented from enjoying at fullest their cultural heritage and particularly, their traditional knowledge, which is being stolen from them, alongside their genetic resources. It has also been assessed, that recognising that biopiracy violates human rights is extremely important, as being conscious about this aspect might help institutions to develop human rights based approaches, either for the protection of TK and GR, or at the same time, towards IP and indigenous people⁶⁰⁰. For instance, developing human rights based approaches might be considered a possible solution to fight biopiracy: indeed, it is a fact worth considering when developing actual means of prevention or redressing.

One of the first and most important solutions, which could actually prevent or redress biopiracy, would be that of strengthening the legal system, which is already in place. It has been already highlighted that one of the underlying aims of the indigenous groups involved in the Nagoya Protocol's negotiations was that of establishing a system which could also prevent biopiracy cases to grow further. Therefore, the system promoted by both CBD and Nagoya has the means to prevent biopiracy, but since cases are growing and not diminishing, it seems only logical to conclude that the mechanisms proposed are not effective enough⁶⁰¹. Although, one of the reasons is surely due to the lack of capacity of some States, especially developing ones, to put in practice the mechanisms proposed by the Convention. Developing capacity building is fundamental not only at the domestic level, but also at the local level so that communities can effectively protect their own rights⁶⁰². Indeed, the adoption of domestic legislation can prevent the exploitation of TK especially in developing countries, as they would avoid interferences from stronger or developed countries, which they would otherwise face in international forums such the WTO, to modify for example, the provisions of the TRIPS Agreement. Furthermore, domestic legislation entails jurisdiction, regulation, and a level of control over who accesses and uses TK, which would be solely in the hands of States or national agencies appointed by the State⁶⁰³. The kind of control allowed by domestic legislation would be in the form of documentation, to defend TK against erroneous patent applications, and lastly, developing domestic legislation, especially by involving indigenous communities, allows States to tailor their laws at best to protect the needs and values of indigenous people.

⁶⁰⁰ I. MGBEOJI, *Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, UBC Press, 2006, p. 189.

⁶⁰¹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 20.

⁶⁰² *Ibid.*

⁶⁰³ J. GARCIA, *Fighting Biopiracy: The Legislative Protection of Traditional Knowledge*, *Berkeley La Raza Law Journal*, Vol. 18, Article 2, 2007, p. 19, available at <https://doi.org/10.15779/Z38M378>

As for the legal system, which is already in place, it is crucial to address also the incompatibilities between the TRIPS and the CBD. The privatisation of rights and monopoly control over resources are all features promoted by the TRIPS Agreement which are clearly incompatible with the aims of the CBD, whose provisions are directed towards the protection and conservation of resources, and towards their sustainable use, as well as to the advancement of indigenous rights⁶⁰⁴. The existence of this conflict allows for loopholes, which TNCs and other institutions engaged in biopiracy activities would profit from. Therefore, strengthening the provisions of both international agreements one in light of the other would concretely and effectively help in the fight against biopiracy. For instance: establishing that the CBD has primacy over TRIPS in regards to traditional knowledge and biodiversity, excluding life forms from patentability and recognising the customary norms and rights of indigenous people over their knowledge and resources, are all solutions which could soften the incompatibility between CBD and TRIPS, thus helping also in framing a more accurate legal framework targeting biopiracy⁶⁰⁵.

In the fight against biopiracy, another fundamental aspect is surely awareness raising. One of the most important trends in this regard has been the continuous campaigning of NGOs and indigenous people's representatives against the patenting of life forms. These actions must be carried out both on an international and national level. Regarding the international level, of course WTO, WIPO and the Conference of the Parties are fundamental forums, in which these topics and issues must be discussed and dealt with⁶⁰⁶. Nationally, on the other hand, awareness raising campaigns must be conducted to help indigenous people to be more conscious about their own rights, and the potential threats and dangers of engaging in biodiversity extraction activities, without having signed and negotiated an agreement. Policies and legal issues related to TK and access to GR should be discussed not only in parliaments, but also involving indigenous people on a regular basis and in a wide range of forums⁶⁰⁷. The active involvement of indigenous people by policy makers in decision processes which directly involve the firsts, allow the latter to develop a broad although more targeted spectrum of regulations and laws, aimed at protecting indigenous' interests and knowledge. Increasing indigenous people's awareness over TK related issues, as well as biopiracy, should be heightened as much as possible⁶⁰⁸.

In regards to awareness raising, before moving to actual solutions enacted by those States mostly affected by biopiracy as well as to community-suitable solutions, the work and efforts of the Indigenous People's Biodiversity Network should be mentioned. Indigenous people have united their strengths, voices and issues to influence policy development and share information regarding biodiversity, as well as raising

⁶⁰⁴ GRAIN's Website: <https://www.grain.org/article/entries/20-trips-versus-cbd>

⁶⁰⁵ *Ibid.*

⁶⁰⁶ Third World Network website: <https://www.twn.my/title/pat-ch.htm>

⁶⁰⁷ S. E. CLARK, I. LAPENA, M. RUIZ, *The Protection of Traditional Knowledge in Peru: A Comparative Perspective*, Washington University Global Studies Law Review, Vol. 3, Issue 3, January 2004, p. 797, available at http://openscholarship.wustl.edu/law_globalstudies/vol3/iss3/3

⁶⁰⁸ *Ibid.*

awareness internationally and amongst indigenous people of their own values and rights⁶⁰⁹. Some of their objectives, include: sharing key information regarding resources' conservation among indigenous peoples themselves and among supporters; protection of TK and supporting indigenous' initiatives related to biodiversity conservation and sustainable use; promoting the creation of advocacy and support groups (which have in many occasions proved to be fundamental); facilitating the participation of indigenous people in intergovernmental meetings both domestically and internationally, such as for example at CBD meetings; enhancing biodiversity conservation through information networks connecting all the already existing knowledge⁶¹⁰.

The solutions proposed so far are very broad and could be applied anywhere in the world, though first, States need to recognise the threat posed by biopiracy, and the importance of the values held and safeguarded by indigenous people. The next pages will be dedicated to initiatives and actual solutions aimed directly at redressing biopiracy, enacted by two of the most affected States in this regard: India and Peru. Secondly, I will focus the attention on solutions which do not need the implementation of States, but which can be enacted by indigenous communities, to protect themselves, their needs, interests and values, such as bio-communities protocols and contracts.

⁶⁰⁹ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 145.

⁶¹⁰ *Ibid.*

3.1 Actual examples enacted by States: the Indian and Peruvian experiences

Interesting and effective initiatives have taken place worldwide, especially in developing countries, to contrast the development of biopiracy. Luckily, some of them have been enacted also with the help of governments, once realized the menace and possible dangers of biopiracy. One of the most impressive and definitely worth mentioning solutions is the Traditional Knowledge Digital Library (TKDL) developed by the Indian government and praised also by many scholars⁶¹¹. The TKDL was born as a joint effort of several Indian institutions, such as the Council of Scientific and Industrial Research (CSIR), which is the largest state-owned research body in India, and the now called Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH), formerly the Department of Indian Systems of Medicine and Homeopathy, another research institute focusing on the development of education and research of the AYUSH systems⁶¹².

The TKDL was born in 2001, after the Indian government spent years and financial resources to revoke two patents, granted by the United States Patent and Trademark Office (USPTO) for turmeric and Neem tree. These two typically Indian resources have been part of its healing culture and methods for millennia, as well as the traditional knowledge related to them, and the USPTO nonetheless granted two patents for their healing properties. The efforts finally gave the hoped results, but it took an extremely long period of time and high costs; thus, the need to develop a system in which Indian traditional knowledge would be registered and accessible for patents offices worldwide⁶¹³. The TKDL relies on an innovative software program and it is a searchable database containing all the already known and documented Indian knowledge related to health methods and practices, medicinal plants and so forth. The new software on which they rely, allows for a facilitated classification of TK compatible with the International Patent Classification (IPC). The Team working for the TKDL is composed of Ayurvedic experts, patent examiners and informatics experts⁶¹⁴.

Interestingly, the minute the TKDL Group started to work and transcribe, they realized that by 2001, annually, almost 2,000 patents applications were filed featuring Indian medicinal systems, methods or knowledge and that they were being erroneously granted throughout the world. How was that possible, if in order to be granted, an invention must meet the novelty requirement? As far as 2001 unfortunately, most of Indian's traditional knowledge existed only in Sanskrit, Hindi, Arabic, Urdu and Tamil, thus making it harder to be accessible or understandable for other patent offices⁶¹⁵. Therefore, when applying

⁶¹¹ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 114.

⁶¹² World Intellectual Property Organization, *Protecting Indian Traditional Knowledge From Biopiracy*, 2011, available at https://www.wipo.int/export/sites/www/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf

⁶¹³ *Ibid.*

⁶¹⁴ C. BELLMANN, G. DUTFIELD and R. MELÉNDEZ-ORTIZ, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*, London, Earthscan Publications Ltd, 2003, p. 173.

⁶¹⁵ World Intellectual Property Organization, *Protecting Indian Traditional Knowledge From Biopiracy*, 2011, available at https://www.wipo.int/export/sites/www/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf

for patent protection, the claimed inventions did not feature as prior art and thus were deemed patentable. This of course posed a serious economic threat to Indian producers, as well as the fact that those producers and local communities felt themselves wrongfully deprived of their knowledge and resources, which is exactly what biopiracy entails⁶¹⁶.

The innovations brought by this mechanism are manifold, starting from the fact that the structured classification system helped innovating the IPC itself. Indeed, the IPC had established only one subgroup in regards to medicinal plants and knowledge, thus meaning that patent examiners were not well equipped when scrutinizing patent applications in reference to medicinal knowledge and plants, though the number raised to 207 in just a few years, thanks to the creation of a peculiar Task Force⁶¹⁷. Indeed, understanding this deep lack, India helped creating the Traditional Knowledge Classification Task Force, comprising besides India, China, the European Union, Japan and the United States, which helped introducing important reforms in the international patent system⁶¹⁸.

Another innovation, which is particularly essential with regard to this dissertation, is the fact that the TKDL was especially designed to prevent biopiracy. Indeed, it presents an integrated global biopiracy watch system, which helps preventing the erroneous granting of patents in relation to Indian medicinal plants and knowledge. In this way, misappropriation of TK can be effectively prevented not only in India, but all over the world, meaning that effective actions can be taken immediately to redress biopiracy, and not once the application has already been filed and maybe granted the patent, which would otherwise require an extremely costly and long process⁶¹⁹. The impact that this enlarged system has already had, not only in India, in regards to preventing biopiracy, has been significant. For instance, the European Patent Office, thanks to TKDL, has been able to identify 215 patent applications, which contained already known Indian medicinal methods or knowledge from 2009. Many of these applications have been withdrawn once put in front of the fact that the knowledge already existed, a tacit admission of biopiracy⁶²⁰. India is the only country which has established a TKDL to protect its traditional knowledge and prevent biopiracy altogether. The positive impacts that this has had on biopiracy are numerous; therefore, this could be considered as an effective means to implement also in other countries, which are facing the threats of biopiracy. Nonetheless, as underlined in the report submitted to WIPO by the Indian government, an internationally legally binding instrument addressing specifically the protection of TK or biopiracy are to be hoped for, and demanded altogether⁶²¹.

⁶¹⁶ World Intellectual Property Organization, *Protecting Indian Traditional Knowledge From Biopiracy*, 2011, available at https://www.wipo.int/export/sites/www/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf

⁶¹⁷ *Ibid.*

⁶¹⁸ *Ibid.*

⁶¹⁹ *Ibid.*

⁶²⁰ *Ibid.*

⁶²¹ *Ibid.*

The second example of solutions aimed at protecting traditional knowledge against biopiracy was enacted by the Peruvian government, which established a system of positive protection for the collective knowledge of indigenous people. Already in 1996, the Andean community, which is a union comprising Bolivia, Colombia, Ecuador, Peru and Venezuela, approved Decision 391 creating a Common Regime on Access to Genetic Resources, soon after the entry into force of the CBD, thus demonstrating the need to put into practice effective and collective means to protect TK. The law provides indigenous communities with the right to decide the conditions allowing access and use of TK and related resources⁶²². Interestingly, this law was born from the common belief that a collective system of protection of TK should be established, and that governments had to work together and cooperate to achieve that goal. Indeed, it was the first law in the world, which established general principles for the protection of collective TK, such as for example the fact that the granting of a patent is conditioned upon safeguarding and respecting the resources and biodiversity, as well as related TK, of all the Andean community State Members⁶²³.

The Peruvian government, right after the adoption of the Common Regime, started to develop a plan for a national legislation protecting TK. The plan included several regional initiatives, which were to integrate the protection granted by the common regime, including a national legislation for the protection of the collective knowledge of indigenous people and the creation of a bioprospecting project. These two initiatives are particularly entangled, as one basically led to the other⁶²⁴. The project was called the International Cooperative Biodiversity Group Program (ICGB), and it involved several national and international institutions, such as: the Natural History Museum of Peru, the Cayetano Heredia University of Peru, Washington University in St. Louis, Searle Pharmaceuticals, and the Aguaruna indigenous communities of the Peruvian Amazon. The aim was to find the right balance for conducting researches on medicinal plants owned and used by the indigenous communities of the Peruvian Amazon, through the use also of their traditional knowledge⁶²⁵. In order to have access to resources and knowledge, the institutions interested had to stipulate a contract with the indigenous communities involved, represented by the National Confederation of Amazonian Nationalities, which included benefit-sharing provisions, as well as terms of access and use. This form of bio-prospecting contract became the model upon which a regulatory framework and the national legislation were based, as part of the Peruvian government plan for protecting TK⁶²⁶.

⁶²² S. E. CLARK, I. LAPEÑA, M. RUIZ, *The Protection of Traditional Knowledge in Peru: A Comparative Perspective*, Washington University Global Studies Law Review, Vol. 3, Issue 3, January 2004, p. 769, available at http://openscholarship.wustl.edu/law_globalstudies/vol3/iss3/3

⁶²³ *Ibid.* p. 770.

⁶²⁴ *Ibid.* p. 772.

⁶²⁵ *Ibid.* p. 773.

⁶²⁶ *Ibid.*

The National Institute for the Defence of Competition and Intellectual Property (INDECOPI) was the government agency appointed to draft national legislation for the protection of the collective knowledge of indigenous people. The INDECOPI decided to organize a meeting of governmental and non-governmental institutions to discuss patents already granted and develop new ways to tackle the issue, as well as patent protection. The working group started drafting a document in collaboration also with the Ministry of Agriculture, and by the end of 1996 the draft law was almost completed. Interestingly, indigenous groups were not represented within the working group at the beginning, but after several meetings it became clear to the drafting committee that such draft law could not be completed without the participation of indigenous communities⁶²⁷. Therefore, representatives of indigenous people were sent to help set the basis of the draft law alongside with the drafting committee, and in 1996 the draft was almost ready.

The committee published the draft and issued a deadline (originally of 60 days, then extended) in May 2000 to send back comments and suggestions. The draft was well received, although the amount of comments was quite significant, allowing for a more complete and detailed version⁶²⁸. The result was Law 27811, adopted in 2002, the first ever protecting collective traditional knowledge in the world. It is a rather dynamic tool, which would be adjusted and improved according to eventual needs, which utilizes a combination of competition law principles, licenses and registries, promoting equity and fairness, directly aimed at the protection of indigenous people's interests and knowledge. Interestingly, it has to be conceived as complementary and integrative of existing IP rules⁶²⁹.

The law specifically protects the collective knowledge of indigenous people, as part of their cultural heritage, which is defined as “*the accumulated, trans-generational knowledge evolved by indigenous peoples and communities concerning the properties, uses and characteristics of biological diversity*”⁶³⁰. This is the peculiar feature of the Peruvian regime, which protects TK as held by one or more indigenous groups, leaving aside individual rights, or the exchanges of knowledge among and between indigenous people. Of course, the aim is that of establishing an effective system for the protection of TK, but at the same time, Law 27811 is designed as a means to prevent biopiracy through control over patent system and rules⁶³¹. Furthermore, a few years later the adoption of the regime, in 2004, the Peruvian government established the National Commission for the Protection of Access to Peruvian Biological Diversity and to the Collective Knowledge of the Indigenous Peoples, also referred to as the National Anti-Biopiracy Commission, whose specific task is to track and analyse patent applications abroad regarding Peruvian

⁶²⁷ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 119.

⁶²⁸ *Ibid.*

⁶²⁹ S. E. CLARK, I. LAPENÑA, M. RUIZ, *The Protection of Traditional Knowledge in Peru: A Comparative Perspective*, Washington University Global Studies Law Review, Vol. 3, Issue 3, January 2004, p. 775, available at http://openscholarship.wustl.edu/law_globalstudies/vol3/iss3/3

⁶³⁰ *Ibid.*

⁶³¹ *Ibid.* p. 774.

biological resources, as well as Peruvian indigenous people's collective knowledge⁶³².

From its establishment, the National Anti-Biopiracy Commission has been drafting reports shared at international forums such as WIPO and the WTO, as well as identifying biopiracy cases and drafting suggestions on how to correct the patent system's lacks in this regard. Sadly though, the Commission still has quite limited resources, not sufficient enough to cover for the richness in biodiversity of Peru, thus it was forced to focus its analysis on a limited and specific amount of resources, namely 35, which were given priority, following some criteria such as for instance, the level of internal and external commercialization and TK associated to it⁶³³. The Anti-Biopiracy Commission has been successful in preventing the granting of patent applications, which featured Peruvian TK and resources, which could not be patented instead, although facing some difficulties. For instance, the information regarding Peruvian resources are quite abundant but difficult to access, translations of patent applications are sometimes inaccurate, or even though accurate, the application itself is not quite clear, sometimes TK and resources used are left out and not mentioned, to name a few⁶³⁴. The Commission has stated in more than one occasion, that the measures so far undertaken at national level are not sufficient enough and they should be also supported by stronger and clearer international agreements. Moreover, patent applications featuring TK and genetic resources should disclose the source and country of origin of said elements, as well as a proof of the fact that those resources were accessed and used according to the law. These are all necessary means to prevent biopiracy cases as well the granting of bad patents, which have been underlined in more than one occasions by the Peruvian government and other countries, such as Brazil, India, Thailand, Colombia and even China⁶³⁵.

The two examples set by the Indian and Peruvian experiences demonstrate that actual solutions exist, which can be enacted at national level to stop the spreading of biopiracy cases. States, in this regard, have the duty to protect their resources and knowledge, but also those of indigenous people, as well as their rights and customary norms. States are called to recognise the existence of this phenomenon and to act in order to redress it. Of course, as demonstrated by the Andean community experience, joint efforts are more than welcome and sometimes even more effective than individual actions carried out by States alone. Moreover, even though both States have witnessed satisfying results, they have both underlined the need for an international agreement, specifically targeting biopiracy.

⁶³² World Intellectual Property Organization, Intergovernmental Committee On Intellectual Property And Genetic Resources, Traditional Knowledge And Folklore, *Combating Biopiracy – The Peruvian Experience*, Geneva, July 3 to 12, 2007, available at https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_11/wipo_grtkf_ic_11_13.pdf

⁶³³ World Intellectual Property Organization, Intergovernmental Committee On Intellectual Property And Genetic Resources, Traditional Knowledge And Folklore, *Combating Biopiracy – The Peruvian Experience*, Geneva, July 3 to 12, 2007, available at https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_11/wipo_grtkf_ic_11_13.pdf

⁶³⁴ *Ibid.*

⁶³⁵ *Ibid.*

3.2 Community based initiatives: bio-community protocols and contracts

The previous chapter has been dedicated to the solutions aimed at preventing biopiracy, which can be enacted and promoted by States. This chapter will focus mostly on community-based initiatives, namely what indigenous communities and groups can actually do to protect their knowledge, resources, as well as values and norms. A possible solution prompted by Teran is developing bio-cultural community protocols, which are defined by Natural Justice as “*articulating community-determined values, procedures and priorities. They set out rights and responsibilities under customary, state and international law as the basis for engaging with external actors such as governments, companies, academics and NGOs. They can be used as catalysts for constructive and proactive responses to threats and opportunities posed by land and resource development, conservation, research, and other legal and policy frameworks*”⁶³⁶. The purposes of bio-community protocols can be manifold, though they can play a crucial role in protecting TK and redressing biopiracy. For instance, an example could be an access and benefit sharing community protocol, regulating the access and use of biological resources and determining who actually owns both resources and associated TK. These protocols usually include also mutually agreed terms requirements as well as prior informed consent, as established under the Nagoya Protocol⁶³⁷. The interesting fact is that Article 12, paragraph 1 of the Nagoya Protocol, as means to implement the Protocol itself, states that Parties shall take into considerations, as effective mechanisms, also local customary laws and community protocols, in order to protect traditional knowledge and genetic resources. Thus, these kinds of solutions are prescribed and promoted by the Protocol⁶³⁸.

The interesting aspect about bio-community protocols is that they tend to have a holistic approach in regards to all the mechanisms set out in the Nagoya Protocol. They set the tone, conditions and interests as well as aspirations of indigenous people in regard to said mechanisms, negotiations and eventual misuse or misappropriations of genetic resources and traditional knowledge, whose protection needs to be one of the core features of these protocols. For instance, the communities in Panama’s Pueblo Guna have already put in place bio-community protocols, which allow them to refuse researches, which might go against their customary laws or values. They have established the right to either approve or refuse research⁶³⁹. Moreover, another important aspect related to bio-community protocols is that they help capacity building and serve as awareness raising instruments. Indeed, the elaboration of these protocols allows indigenous people to have a deeper understanding of what mutually agreed terms and prior

⁶³⁶ Natural Justice Website: <https://naturaljustice.org/publication/biocultural-community-protocols/>

⁶³⁷ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, The International Indigenous Policy Journal, Vol. 7, Issue 2, April 2016, p. 21.

⁶³⁸ Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

⁶³⁹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, The International Indigenous Policy Journal, Vol. 7, Issue 2, April 2016, p. 21.

informed consent are, how they actually work, which is a crucial feature when deciding to engage in activities or researches involving either indigenous TK or GR. They help indigenous people to be more conscious when arriving at the negotiating table, and especially when deciding whether to give their consent or not⁶⁴⁰.

Clearly, Teran underlines, indigenous people are unable to perform the abovementioned actions without the help of skilled people, or experts, thus a fundamental strategy is to build alliances and create expert teams, helped by institutions or entities which really want to achieve the same goals as indigenous people. Partnerships are more than welcome, in order to protect the values and resources of the communities and help their development⁶⁴¹. To conclude: *“the protocols are in the oral memory of our (indigenous) peoples, but we need to remember, re-learn and re-work them according to current needs. It is important for us to gain internal strength of our governance systems, local authorities, and all Indigenous Peoples and have new leadership with a renewed and strong Indigenous spirituality.”*⁶⁴²

Other solutions, which could take place at community level, are, for example, collaborative researches, namely a research partnership in which equal parties are involved and local communities are treated as experts on the matter and thus made part of the partnership agreement. Of course, this could be carried out more easily if indigenous people could actually have control over access to their resources and knowledge, thus being able to regulate the activities of researchers. This is made unfortunately more difficult, in situations in which indigenous people do not own the land or resources, which are otherwise in the hands of the State, making effective control harder to carry out⁶⁴³.

Alternative to collaborative researches are the guidelines for researchers, as the example of the Kuna guidelines. This project has been developed by the Proyecto de Estudio para el Manejo de Areas Silvestres de Kuna Yala (PEMASKY) and the Asociación de Empleados Kunas of Panama, which resulted in the creation of a manual for researchers interested in the area. The manual indicates Kuna objectives in regards to forest management and biodiversity conservation, their priorities, it outlines guidelines for researches activities and the nature of benefits which eventually have to be shared with the Kuna⁶⁴⁴. Indeed, if researchers are interested in carrying out activities in Kuna areas, according to the guidelines they have to: develop a plan including timing, extent and potential cultural and environmental impact on the area, provide PEMASKY with reports on the activities as well as photos, include Kuna people as collaborators of the research, and train them in regards to scientific techniques (one of the benefits to share with them); request permission for collection of species and only subsequent to

⁶⁴⁰ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, The International Indigenous Policy Journal, Vol. 7, Issue 2, April 2016, p. 21.

⁶⁴¹ *Ibid.* p. 22.

⁶⁴² *Ibid.* p. 21.

⁶⁴³ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 140.

⁶⁴⁴ *Ibid.*

authorization by PEMASKY, begin the collecting process; respect Kuna culture, norms and values. They also include which kinds of sites and species are excluded from research, and also forbid the modification of genes⁶⁴⁵. Since indigenous people have developed these guidelines, through, of course, the help of organizations and representatives, they could be a model, which could easily be replicated by other indigenous groups worldwide.

Following this line another example is the issuing of contracts between TK holders, in this case licensor, and the bioprospecting company, or licensee. Contracts provide companies with licensee to access and use traditional knowledge, not including though the transfer of any tangible matter. Know-how licenses can be quite appropriate and effective in bioprospecting processes, as they set terms of access and recognise altogether indigenous rights over their resources⁶⁴⁶. The fundamental features of these contracts are: written form; the licensor can transfer its rights related to TK, except the right to be mentioned as the inventor, which should be mandatory; diligence of the licensee in carrying out the activities, as well as a confidentiality request on the know-how; eventual infringers must be indicated to the TK holder; the results of the research must be shared with the TK holder annually; and lastly, improvements must be shared and communicated, and the licensee cannot exclude the licensor to use said improvements⁶⁴⁷. Contracts, with the help of representatives and legal experts can be a practical solution, which can be easily carried out by indigenous communities, and most importantly, they are legally enforceable and have consequences in case of infringements.

The interesting aspect of these types of solutions is that they can be enacted by indigenous people, without having to wait for States to intercede for them, which sometimes is one of the reasons why biopiracy can easily happen, since States lack either capacity or awareness over the issue. These solutions, as well as those undertaken at national level, should be implemented thoroughly and jointly, to make sure that effective means are in place to redress biopiracy. As the experience of the Andean community demonstrates, joint efforts, not only internationally but also domestically between indigenous people, NGOs and States are quite effective for all the reasons mentioned above.

⁶⁴⁵ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 141.

⁶⁴⁶ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 114.

⁶⁴⁷ *Ibid.*

CHAPTER 5: CASE STUDIES

Introduction

This chapter is aimed at illustrating some of the most notorious cases of biopiracy, which have in some occasions also helped recognising, naming and later addressing the phenomenon itself. The purpose of the following case studies is manifold: first, they are intended at illustrating the dynamics of how biopiracy unfolds, namely how misappropriations occur; secondly, they aim at highlighting also the relations between the main actors involved, TNCs, States and indigenous people, and specifically how the firsts perpetrate biopiracy acts; thirdly, they also wish to highlight some of the lacks of the existing international legal system. Most importantly, the chapter aims at highlighting the main consequences of biopiracy, and how patent law tends in most cases to be used as a means to further biopiracy, and not to contrast it. Lastly, these case studies are also intended at illustrating the connection with human rights violations and more precisely how biopiracy violates cultural rights, as it was already explained in the previous chapter.

As it was already explained in the chapter addressing the characteristics of biopiracy, Robison has divided biopiracy cases in two main categories: patent-related cases and non-patent biopiracy cases. The first group refers to the most common and recognised cases of biopiracy, as they feature patent applications, which, as it should be clear by now, are a fundamental feature of biopiracy. The second category refers to those incidents, which, even though not featuring patent applications, should be given more attention since they involve some of the characteristics that feature biopiracy, namely misappropriations of TK or GR, and sometimes they are not even recognised and categorized as such⁶⁴⁸. In order to be as clearer as possible, and to explain in detail the features of biopiracy, the same categorization will be followed, and more precisely, the first five examples will be related to patents, while the last one, will be focused on misappropriations not involving patents. Therefore, the following cases are essential in trying to demonstrate what has been so far explained only in theory: biopiracy consists of a misappropriation of traditional knowledge, thus resulting into a violation of human rights and more precisely of cultural rights, as it was already established.

For instance, the first case presented, the Avon case, aims at illustrating the lacks of the international system under the CBD and the Nagoya Protocol, since this particular incident happened after the entry into force of the Protocol. Interestingly, Thailand and Philippines, the two regions in which most of Avon biopiracy activities took place, are parties to the CBD; while the TNC, is based in New York and the United States have not ratified neither the CBD nor the Protocol. This examples reiterates also a point previously underlined, namely the fact that even though the Nagoya Protocol provides quite a detailed

⁶⁴⁸ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 45.

and efficient framework to contrast biopiracy, its effectiveness is sometimes undermined by the difficulty in implementing it, especially for developing countries⁶⁴⁹. Moreover, the fact that Avon misappropriated not only one resource and related knowledge, but sixteen in total, is a clear example of violation of cultural rights. Indeed, stealing the knowledge related to so many resources and trying to issue patents, thus hindering its creators' chances (indigenous groups or farmers) to use and access them, is an example of how access to intangible cultural heritage is prevented to indigenous groups, thus resulting in a human rights violation, which is the main argument of this dissertation. At the same time, the Hoodia case provides the same insights, related to human rights violations: it will be explained how the San, a South African indigenous community, was legally prevented, due to a benefit-sharing agreement, to use the knowledge related to Hoodia, which they had developed for centuries, in any commercial application in the future. This clearly shows hindrance to access to and control over intangible cultural heritage, thus consisting of a human rights violation. Furthermore, this could also be used as an argumentation in favour of the importance of awareness raising: had the San known exactly what the agreement entailed, they probably would not have agreed to it. Moreover, this particular episode warns about the possible dangers and lacks of neither equal nor fair benefits-sharing agreements, which have been proposed as a potential solution to redress biopiracy.

The Neem Tree case will be presented as an example of: first of all, the difficulty of having a patent withdrawn once it has been granted in the United States of America, secondly, of the need to implement additional solutions to the ones existing at the international level, such as for example the TKDL developed in India, and again, of how the misappropriation of knowledge consists of a human rights violation. The Enola Bean case, a really interesting textbook case of biopiracy, serves as an example to demonstrate how biopiracy, as stated by Robinson, really is a discursive tool, and also, of how two sides can view at the same events and present completely different conclusions or perspectives. Moreover, this particular case is an example of how biopiracy entails other human rights implications, for instance, hindering the right to work, in this case of Mexican farmers, when enforcing the rights derived from a patent⁶⁵⁰. The last two cases, Basmati and Jasmine rice, are quite similar, but differ on the fact that Basmati was patented by the TNC involved, while Jasmine rice was not patented, and the biopiracy activity was in the second case performed by a research institute, thus demonstrating that biopiracy activities do not always need either a TNC performing the act, or a patent to be regarded as such. Therefore, human rights violations deriving from biopiracy are not only, and always, committed by TNCs.

⁶⁴⁹ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 16.

⁶⁵⁰ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 55.

Interestingly, Pat Mooney once stated that: “*Whatever the will and wishes of those involved, there is no bioprospecting. There is only biopiracy.*”⁶⁵¹. Even though he was exaggerating for emphasis, the author was simply giving voice to the growing concerns and discontent among indigenous communities and NGOs, which were the result of the increase of biopiracy cases in the 1990s. Mooney explained that without an adequate international legal system, enforcement and monitoring mechanisms, the misappropriations of indigenous people’s TK and GR were ever more likely to happen. Nonetheless, it should be noted that these statements were made before the entry into force of the CBD and the Nagoya Protocol⁶⁵². Unfortunately though, as it should be clear by now, the enforcement mechanisms under the CBD and the Protocol have not been developed efficiently, as many indigenous communities and developing countries would have wanted to. Moreover, the fact that one of the underlying aims was that of fighting increasing biopiracy incidents, but falling short of a definition of the phenomenon, which is not included in any of the documents, should be deemed as a lack of the existing system⁶⁵³.

After this small parenthesis on the lacks of the international system, it is important to restate once again that patent-related cases of biopiracy are as much significant as non-patent ones. It should not be mistakenly conceived that non-patent biopiracy cases do not entail some other form of control, which could otherwise be carried out in the form of other IP tools, namely trade marks, or also through plant variety protection. Although different in one feature, these cases are by all means episodes of biopiracy, which is also a discursive tool used both as an offence and a political leverage⁶⁵⁴. Biopiracy has in fact been often pointed out in IP related discourse, to highlight the hegemony and power that IP rights tend to give to some individuals, who then tend to use them for commercial and economic purposes. It will be demonstrated, how in some occasions the appropriation of genetic resources was intended at later damaging the economy or exports of another country, where the resource originated, as it was already stated. Biopiracy has also been taken into account to further the causes of indigenous communities asking for additional rights, especially in regards to the ownership of their resources and knowledge⁶⁵⁵.

As it was already stated, the very first biopiracy cases to be named as such, emerged in the second half of the twentieth century, even though history does not lack examples of misappropriation of either traditional knowledge or genetic resources, and increased in the 1990s. Interestingly, the CBD Secretariat, in collaboration with Third World Network, have elaborated a document, which contains some of the

⁶⁵¹ P. R. Mooney, ‘*Why We Call It Biopiracy*’ - *Bioprospecting: From Biodiversity in the South to Medicines in the North*, Spartacus Forlag, H. Svarstad and S. Dhillon, 2000, in D. F. ROBINSON, *Biopiracy and the Innovations of Indigenous People and Local Communities*, p. 77, in P. DRAHOS and S. FRANKEL, *Indigenous People’s Innovations*, Canberra, Australian National University E Press, 2016.

⁶⁵² D. F. ROBINSON, *Biopiracy and the Innovations of Indigenous People and Local Communities*, p. 77, in P. DRAHOS and S. FRANKEL, *Indigenous People’s Innovations*, Canberra, Australian National University E Press, 2016.

⁶⁵³ *Ibid.*

⁶⁵⁴ D. F. ROBINSON, *Biopiracy and the Innovations of Indigenous People and Local Communities*, p. 77, in P. DRAHOS and S. FRANKEL, *Indigenous People’s Innovations*, Canberra, Australian National University E Press, 2016.

⁶⁵⁵ *Ibid.*

most recent biopiracy cases, a proof of the fact that the issue has gained attention also by international institutions as the CBD Secretariat⁶⁵⁶. The document indicates some recent biopiracy cases such as the one concerning the Sorghum Genes, an African grown plant later exported in South Asia, and deployed as a biofuel and later patented by a Texan company called A&M; or again the so called Avon case, in which the large skincare company has been interested in Asian medicinal plants and methods to create cosmetics, and has issued six patents over sixteen Asian plant species, most of which are related also to already known knowledge, but have been granted by the US Patent Office anyways⁶⁵⁷. These recent cases documented by the CBD Secretariat demonstrate that biopiracy is an issue that needs worldwide attention, and especially by those institutions seeking the protection of biodiversity. The fact that the Secretariat is aware of these cases, and has cooperated with an NGO to try and outline them, has a significant value. Again, the Avon case has occurred after the adoption of the Nagoya Protocol, thus showing the need for a stronger control and enforcement mechanism under the Protocol, and also the need for stronger regulation in regards to IP rights related to GR, as well regional and international cooperation⁶⁵⁸.

I will now begin with outlining some of most famous examples of biopiracy cases, but before I would like to restate some of the most salient features of these cases. The first case, as it was already stated, deals with one of the most recent cases, namely the one involving Avon, a well-known skincare multinational corporation, which is US-based. Unfortunately, most of the examples provided feature a US institution or company, and demonstrate how hard it is to withdraw a patent in the US after it has already been granted, in spite of evidence claiming that the patent was erroneously granted. Moreover, the following cases, Hoodia, Neem Tree and Enola Bean resemble the most characterising features of biopiracy, and show how developing countries, may they be in South Asia or South America, are usually targeted for their rich biodiversity. These examples also will demonstrate how easily misappropriations can happen, and how difficult it is for either indigenous communities or farmers to have their rights recognised. Most importantly, they will demonstrate how biopiracy has human rights implications affecting not only the right to enjoy cultural heritage, but also affecting other economic and social rights. Lastly, the Basmati and Jasmine rice examples will show that, even though one is patent related and the other is not, biopiracy can happen under many different forms, which do not necessarily have to include patents, even though it is one of the most common traits.

⁶⁵⁶ <https://www.cbd.int/abs/side-events/icnp2/twn-icnp2-Biopiracy.pdf>

⁶⁵⁷ <https://www.cbd.int/abs/side-events/icnp2/twn-icnp2-Biopiracy.pdf>

⁶⁵⁸ E. HAMMOND, *Biopiracy continues: a compilation of some recent cases*, Penang, Third World Network, 2013 available at <https://studylib.net/doc/8035023/biopiracy-continues---a-compilation-of-some-recent-cases>

1. The Avon case

The Avon case is one of the most recent examples of biopiracy, which happened after the adoption of the Nagoya Protocol, namely the additional protocol to the CBD aimed at contrasting the misappropriations of traditional knowledge and, to some extent, also biopiracy. Interestingly, Avon has not been involved in biopiracy activities focusing on one genetic resource only, but sixteen to be exact, all over Asia. Most of the plants Avon is interested in, are fundamental components of Asian food or medicines, such as for example: Bignay or Mao Luang, Elephant foot yam, Agati, Bai yanang, False daisy, *Alisma orientale*, Bình vôi and Soap nut or *Sapindus rarak*⁶⁵⁹. Of these resources, in 2013, four had already been granted a patent, and all the others appeared in pending patent applications. Unfortunately, it is not known how Avon accessed all the resources: as Hammond notices, many can be easily accessed anywhere, such as for example *Eclipta prostrata*, while others, such as *Stephania rotunda* can only be found in central Asia. Truth to be told, Avon has many research centres in Asia and has always maintained commercial relationships with the country, even though it is based in New York city. Thus, it would not have been hard for the company to access the resources. Interestingly though, all patents descriptions feature New York based employees as investors, meaning that the creation process should have occurred in the US⁶⁶⁰. Therefore, even though it is not known how Avon accessed the resources, it is well recognised that all of them have been part of the Asian medicinal culture for centuries. Starting from Bignay or Mao Luang, the resource appears in patent application WO2012005876 as a stimulant for a specific protein of the skin, which allows it to look younger. Nonetheless, the resource has been used for centuries in Indonesia as a food source, due to its multi-coloured and nutrient fruits, or also turned into wine in Thailand and the Philippines. Due to its popularity, the plant has also appeared in many publications related to medicinal uses of plants or in many medicinal inventories across the countries of that area, thus constituting prior art⁶⁶¹.

On the other hand, the plant known in English as Elephant foot yam, which features in US patent 7,618,662, is deployed by Avon as a product stimulating fat production of the skin, which should make it look brighter and more good-looking. Nonetheless, the plant has been used in Asia for quite some time, to cure skin disorders or as edible tuber; and it was documented in many medicinal publications⁶⁶². False daisy, another resource patented by Avon, is used in skincare and precisely as cellulite treatment. Interestingly, this particular resource is not native of Asia but of the Americas, although it has been developed mostly in the first country for its medicinal properties. For instance in China it is used to cure many health problems, and it appeared in the manual of the country's famous "barefoot doctors", as well

⁶⁵⁹ E. HAMMOND, *Biopiracy continues: a compilation of some recent cases*, Penang, Third World Network, 2013, p. 5, available at <https://studylib.net/doc/8035023/biopiracy-continues---a-compilation-of-some-recent-cases>

⁶⁶⁰ *Ibid.* p. 4.

⁶⁶¹ *Ibid.* p. 5.

⁶⁶² *Ibid.*

as in many accounts of Indian medicine⁶⁶³. The list continues for so many other Asian traditional resources. Some of the patents applications are quite specific in the description, such as for example those featuring the plants, which stimulate the production of a skin protein, while others are actually broad and general, stating that they are used for improving the appearance of the skin, as specified in the patent description. Most of the patented products can be found nowadays in Avon skincare products, such as for example False daisy and Elephant foot yam⁶⁶⁴.

Of course, no documentation of benefit sharing agreements between the communities who have developed and improved the plants over the centuries and Avon have been found, or between Avon and governmental institutions of the countries from which the resources originate. Undoubtedly, the plants used by Avon come from many Asian countries and have been used in traditional medicine for quite some time, as well as featured in many publications in the area. Therefore even though the company declared that the inventors are all the employees based in the New York branch, it is quite difficult to believe. Avon is freely making Asian resources available for itself, even after the adoption of the Nagoya Protocol⁶⁶⁵.

This raises some concerns regarding the effectiveness of the Protocol, and calls for control mechanisms and regional, or even international cooperation. The solutions, which could be implemented, a part from a clearinghouse mechanism under the Protocol, should include documentation of traditional medicinal knowledge as the one already developed by the Indian government, namely TKDL. Information would be collected from indigenous communities owning the TK and documented, so as to present documented prior art in case of patent request⁶⁶⁶. This kind of mechanism could be extended in order to create an Asian TK digital library, containing all the knowledge related to the uses of plants of that area. Furthermore, the ratification by the US of the CBD would really be helpful in preventing cases like this from happening again, as well as a stricter system of granting of patents to US based companies. The following cases will also demonstrate how easily patents in the US are granted to its own companies, and how difficult it is to have them withdrawn.

⁶⁶³ E. HAMMOND, *Biopiracy continues: a compilation of some recent cases*, Penang, Third World Network, 2013, p. 5, available at <https://studylib.net/doc/8035023/biopiracy-continues---a-compilation-of-some-recent-cases>

⁶⁶⁴ *Ibid.* p. 7.

⁶⁶⁵ *Ibid.* p. 8.

⁶⁶⁶ *Ibid.*

2. The Hoodia case

One of the most debated examples was the Hoodia case, which happened in South Africa. This case involved the indigenous community of the San, who have lived for thousands of years in the Kalahari Desert in South Africa. In particular, the Khomani group of the San have been employing the interior parts of the Hoodia plant, a type of cactus, as an appetite suppressant. They have been using it for centuries, in order to have enough energy when engaging in long trips, for example for hunting, or for looking for food sources when they are scarce⁶⁶⁷. The practice was brought to the attention of the South African Council for Scientific and Industrial Research (CSIR) during the 1960s, as they became interested in the properties of the plant. Particularly, they were interested in developing the plant as an appetite suppressant: their hopes were that it would form an anti-obesity treatment to sell worldwide, which would become Africa's first blockbuster drug⁶⁶⁸.

Thus, in 1998 the CSIR filed an international patent application, thanks to the provisions of the Patent Cooperation Treaty, and in some countries, such as for example the USA, the patent was granted. The patent covers the chemical components of the Hoodia plants, which have appetite suppressant properties. Interestingly, from the very beginning the CSIR was criticised for exploiting the San's knowledge without adequate recognition of their contributions and without sharing benefits with them⁶⁶⁹. After some legal negotiations the San were able to have their unique contribution recognised, and specifically the use of their traditional knowledge and innovative activity in recognising the peculiar properties of the Hoodia plant as an appetite suppressant, all established in a written document, a Memorandum of Understanding between the San and the CSIR⁶⁷⁰.

Following the critics which CSIR received at the beginning for not involving the San, they negotiated a benefit sharing agreement, establishing that the indigenous community were to receive eight per cent of milestone payments and six per cent of royalties granted to CSIR on the sale of the final product⁶⁷¹. Interestingly, the agreement prevented the San to use their knowledge related to Hoodia in any other commercial application. Moreover, the agreement established that the San were to be rewarded on a one-time-basis for their knowledge, meaning that they only had to be thanked for their initial contribution of sharing the knowledge, and not for the fact that it was about to be continuously used and, exploited, by other companies⁶⁷².

⁶⁶⁷ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 54.

⁶⁶⁸ *Ibid.*

⁶⁶⁹ World Intellectual Property Organisation, *Case Study: Hoodia Plant*, January 2008, available at https://www.wipo.int/export/sites/www/academy/en/about/global_network/educational_materials/cs1_hoodia.pdf

⁶⁷⁰ *Ibid.*

⁶⁷¹ *Ibid.*

⁶⁷² D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 98, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

Later in fact, CSIR decided to license the patent to Phytopharm, a British company, which developed the drug and later patented the appetite suppressant ingredient in the Hoodia, called P57. Phytopharm consequently sold the rights of the license to Pfizer, the US based giant pharmaceutical company, without even notifying the San about these changes. Of course, no benefit sharing agreement was later negotiated between the San and either Phytopharm or Pfizer, thus the two companies were exempted from sharing any kind of benefit with the indigenous community⁶⁷³. Moreover, given the fact that the San were not allowed to use their knowledge related to Hoodia in any other commercial application, Harry and Kanehe argue that the companies were able to establish an actual monopoly over the San's traditional knowledge. It is also important to mention, that neither of the two patents of course featured the San nor the Khomani in the application. Of course, Phytopharm was not free from critics, as they did not involve nor notified the changes to the San, though they later tried to apologize for their behaviour by stating that they had thought that the people who had originally used the Hoodia were extinct⁶⁷⁴.

The two major issues arising from the Hoodia case are the following: first of all, as the South African delegate underlined in a report sent to WIPO, as far as 2008 the final product developed by Pfizer, which partnered also with Unilever to improve their formula, was not even on the market, yet other companies were already selling online diet products, claiming they contained Hoodia extracts as appetite suppressants. In that way, not only were these minor companies bypassing the patent, but also they were not providing the San with adequate compensation for their knowledge and resources⁶⁷⁵. Secondly, Harry and Kanehe underline that what happened to the San was consistent with the provisions established by international law instruments, namely the CBD and also with the Bonn Guidelines. Indeed, both the CBD and the Bonn Guidelines establish the national authorities as the competent ones in holding resources. The genetic resources are owned by the State, not by indigenous communities⁶⁷⁶. Therefore, the Hoodia case was totally consistent with the CBD and the Bonn Guidelines since CSIR acted as a national authority granting access to Hoodia. Moreover, according to South African law, the San had no established right in regards to Hoodia, thus their consent was not requested, allowing CSIR to patent the resource and license it to whomever they wished⁶⁷⁷.

The only reason, for which a benefit sharing agreement was established between the CSIR and the San, was due, as it was already explained, to the exposure of the CSIR's lack of involvement of the San. Particularly important was the work of a South African activist, Rachel Wynberg, who exposed CSIR publicly on newspapers and involved also NGOs in the process, which severely criticised the behaviour

⁶⁷³ D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 98, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁶⁷⁴ *Ibid.*

⁶⁷⁵ World Intellectual Property Organisation, *Case Study: Hoodia Plant*, January 2008, available at https://www.wipo.int/export/sites/www/academy/en/about/global_network/educational_materials/cs1_hoodia.pdf

⁶⁷⁶ D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 99, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁶⁷⁷ *Ibid.*

of the South African agency⁶⁷⁸. The Working Group on Indigenous Minorities in Southern Africa (WIMSA), an African-based NGO, which represented also the San, was quite active in criticising the behaviour of CSIR and urged them to negotiate a benefit sharing agreement. The result was the Memorandum of Understanding, which was already mentioned, and the consequent benefit sharing agreement called “San Hoodia Benefit-Sharing Trust”⁶⁷⁹. Needless to say the kind of benefits, not only under an economic perspective, that the benefit sharing agreement negotiated with CSIR was said to bring to the San, were numerous. Building hospitals and investments in education and development projects were among the main benefits, which would have resulted from the use of the revenues obtained through the agreement. The lawyer representing the San, who had negotiated the agreement, stated that it had to be considered as a ground-breaking example of good bioprospecting practice, which could be applied everywhere in the world⁶⁸⁰.

As a matter of fact, notwithstanding some critics also to the agreement, it was promoted with the general public as a successful deal, used to promote benefit-sharing agreements as a poverty alleviation mechanism. The revenues of the sale of the product are transferred and kept by the Trust, and they are to be used for health care, infrastructure and social security. At the beginning of this dissertation, I mentioned the problems related to narrative, namely at telling a story only from one perspective⁶⁸¹. The story of the Hoodia and the San was sold as a success, as a means to provide indigenous people with incredible opportunities. Nonetheless, as again Harry and Kanehe underline, this perspective lacks a fundamental element, as it neglects the fact that quality health care, education and social security are basic human rights which should be granted to all peoples alike. Basic human rights should not be sold as unique opportunities for recognition of indigenous people, to convey the idea that an agreement, actually selling away monopoly over traditional knowledge, was successful⁶⁸².

The Hoodia case is an extremely interesting, although of course sad example, due to its complex features: it tackles the issue of patents, the lacks of the international system establishing benefit sharing, the problems related with a weak domestic legislation covering the issue, and so forth. Indeed, it is a clear example of biopiracy as the traditional knowledge and resource of the San were initially taken from them and patented to be used for commercial purposes, involving thus TNCs, therefore presenting all the elements, which actually constitute a biopiracy case⁶⁸³. Only later, was a benefits-sharing agreement negotiated, according to the provisions of the CBD and the Boon Guidelines, though not changing the fact that what happened with Hoodia and the San was an actual case of biopiracy. This of course adds more

⁶⁷⁸ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 53.

⁶⁷⁹ *Ibid.*

⁶⁸⁰ World Intellectual Property Organisation, *Case Study: Hoodia Plant*, January 2008, available at https://www.wipo.int/export/sites/www/academy/en/about/global_network/educational_materials/cs1_hoodia.pdf

⁶⁸¹ D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 101, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

⁶⁸² *Ibid.*

⁶⁸³ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 53.

interest and complexity to the case, as it demonstrates that even though an agreement might be signed, it does not mean that it will automatically be fair for the indigenous community involved. Moreover, it also demonstrates the faults of providing ownership of resources only to the State, as it was the CSIR not the San who authorised access to their resources and related knowledge, which should now have nonetheless been limited by the Nagoya Protocol⁶⁸⁴. It also proves how facts can be twisted and attributed different interpretations to further an idea, which is actually unfair, as basic human rights have been sold not as something that a State should grant to its entire people, without discrimination.

⁶⁸⁴ D. HARRY and L. M. KANEHE, *The BS in Access and Benefit Sharing (ABS): Critical Questions for Indigenous People*, p. 100, in B. BURROWS, *The Catch: Perspectives in Benefit Sharing*, 1st edition, The Edmonds Institute, Washington, 2005.

3. The Neem Tree case

The following one is another example of patent-related biopiracy case, as for the Hoodia case. This particular case is quite interesting, as the Neem tree, or more precisely some of its components, have not been subjected to one patent, but actually to forty only in the United States and more than one hundred (150 to be exact) worldwide. Of course, these patents did not feature Neem-related components only, but also the related traditional knowledge⁶⁸⁵. First, it might be important though to provide a brief history of the resource.

Indian farmers have been using the Neem tree for centuries. It has mostly been used to protect crops from insects, although it has several other applications according to which part of the tree is used. For instance, it seems to be effective in contrasting malaria and internal worms; its leaves can be used to store cereals and protect them from insects, as well as clothes wrapped with these leaves are protected from moths. Furthermore, the oil extracted from the plant can be used to make candles and soaps, or as a contraceptive or even to fuel diesel engines; and it is also quite effective in cleaning teeth, since it is used by millions of Indians as a substitute for toothpaste⁶⁸⁶. Its main uses though have been those of a pesticide, a medicine and a fertilizer, and especially utilized by Indians, as it grows mainly in that region, of which it is also native. Currently, the Neem tree can be found growing also in Australia, Africa, Fiji, Central and South America, Porto Rico and Hawaii, as it was exported to those countries during the twentieth century⁶⁸⁷. As it can be deduced, the Neem tree has had a significant value, and impact as well, on the lives of many Indians, thus acquiring over the years a crucial cultural significance. Interestingly, some indigenous groups in India have developed some sort of adoration towards the tree, which is worshipped like a god, thus reinforcing the deep cultural value and meaning that this tree has for many Indians⁶⁸⁸.

Being used commonly as either a medicine or a pesticide, there was quite an amount of TK related to the resource. In regards to its pesticide properties, the TK was nonetheless limited: Indian farmers used to crush the seeds of the Neem tree and dip them into either alcohol, though most commonly water, and apply the resulting blend over crops, which, however, did not last very long⁶⁸⁹. Clearly, as a natural pesticide, environmentally friendly and cheap, alternative to synthetic pesticides, the attractiveness of the blend was quite huge. So much interest was drawn towards its seeds, that the US National Academy of Sciences defined the discovery some sort of breakthrough for solving global problems, such as cut down the population growth, determine a new era of pest control and provide the worldwide population with

⁶⁸⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 53.

⁶⁸⁶ D. A. POSEY and G. DUTFIELD, *Beyond Intellectual Property*, Ottawa, International Development Research Centre, 1996, p. 80.

⁶⁸⁷ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 120.

⁶⁸⁸ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 215.

⁶⁸⁹ *Ibid.*

cheap and affordable medicines, as well as also solving the problem of deforestation and climate change: some sort of key to solve all the problems affecting the world⁶⁹⁰.

Therefore, in the 1990s, a US based transnational corporation, W.R. Grace, became interested in the seed and developed a method to stabilize the blend created by Indian farmers, in order to have a mixture that would last longer, and that could be sold as a packaged commodity. The mixture obtained resulted in a human nontoxic and biodegradable pesticide. Even though these properties were already known by millions of Indian farmers, the W.R. Grace filed patent applications both in the US and in Europe, and subsequently obtained them⁶⁹¹. The granting of the patents generated quite a large negative resonance, especially in India, where most of the TK holders lived, seeing themselves deprived of their own knowledge, and without recognition. Thus, in 1993, Indian farmers launched the Neem Campaign, in order to attract the attention of the government and other international actors over their issue, fearing that their resources and traditional knowledge were increasingly under threat by foreign companies wishing to establish control through the granting of patents⁶⁹².

Fortunately, this campaign attracted quite the audience, and Indian experts on patents and traditional knowledge issues collected the plea of Indian farmers. Thus, shortly after, the Indian NGO Research Foundation for Science, Technology and Environment challenged the patent granted to W.R. Grace by the European Patent Office (EPO). The challenge was led by a group of activist and experts, composed by Vandana Shiva, as the Director of the New Delhi based Research Foundation for Science, Technology and Ecology (RFSTE); Linda Bullard, Vice- president of the International Foundation of Organic Agriculture Movements (IFOAM); and Magda Aelvoet, president of the Green Group in the European Parliament at the time the patent was opposed⁶⁹³. These three were called, and later gave life to, the “Neem Team”, a group fighting and challenging Neem patents all over the world. In challenging this patent, the group wanted to further the cause of the Indian farmers deprived of their knowledge and resources, and they also wanted to underline how TNCs often act also with the tacit approval of wealthy and developed governments, by stealing biological resources from the South through a specific and “legitimate” means: patents⁶⁹⁴.

The European patent was granted to W.R. Grace for the fungicidal effects of the Neem mixture, and it was challenged as it was considered lacking the novelty and inventive step criteria, as well as going against morality, as it was provided without recognition of the actual owners of the TK and resources, thus resulting in a theft. It was one of the first times that the definition of biopiracy was presented in filing

⁶⁹⁰ C. HAMILTON, *Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property*, Developing World Bioethics, Vol. 6, Blackwell Publishing Ltd, November 3rd, 2006, p. 165.

⁶⁹¹ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 215.

⁶⁹² C. HAMILTON, *Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property*, Developing World Bioethics, Vol. 6, Blackwell Publishing Ltd, November 3rd, 2006, p. 166.

⁶⁹³ *Ibid.*

⁶⁹⁴ *Ibid.*

an opposition to the granting of a patent⁶⁹⁵. The patent was finally withdrawn, thanks also to the testimony of an Indian business claiming they had been using Neem in the same way long before the TNC applied for the patent, meaning that the knowledge constituted prior art, and that the patent lacked the novelty requirement; but also thanks to the large amount of documents provided by the opponents presenting evidences that the invention was not new nor inventive at all. The latter one was actually the argument provided by the EPO when issuing the withdrawal of the patent. The patent was invalidated on the grounds that it was obvious and considered a novelty destroying prior art⁶⁹⁶.

Interestingly, there was a second challenge to a Neem related patent, always for a patent owned by W. R. Grace, though this time in the United States. In this occasion, the opposition was far more challenging. As a matter of fact, in the United States, according to section 35 of the US Code, paragraph 102(a), foreign TK can only challenge a US patent novelty claim, if said TK has been featured in any printed publication before the application for the patent was filed by the US applicant. Unfortunately, at that time, the Neem tree and its properties did not feature in any written or readable document⁶⁹⁷. Therefore, unfortunately, the challenge was unsuccessful and the patent was not withdrawn, mostly due to the arguments provided by W. R. Grace, claiming that the genuine innovation resided in the extraction process, thus that the patent claim was legitimate. They stated: “*Although traditional knowledge inspired the research and development that led to these patented compositions and processes, they were considered sufficiently novel and different from the original product of nature and the traditional method of use to be patentable*”⁶⁹⁸. Thus, since the extraction process has been deemed as novel, and containing an inventive step from the original Indian technique, and due to the fact that no prior written examples related to the Neem tree existed, the patent was not withdrawn, even though the plant had been used for centuries by Indian farmers, in more than one application⁶⁹⁹.

The Neem tree case provides an insightful example of how biopiracy works, and how patent law can be deployed as a means not to counter it, but rather to further it. Indeed, in this particular case, the fact that the patent has not been withdrawn by the US Patent Office, leads to the false claim that the properties of the bio-pesticide have been actually developed by the patentee, namely W.R. Grace, while in fact it was developed initially, even though in a raw manner, by the Indian farmers. Moreover, this conveys again a false idea, namely that the traditional knowledge always initially created by the Indians, is not essential in developing the product which will later be utilized and commercialized, and it simultaneously decreases

⁶⁹⁵ C. HAMILTON, *Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy Tell us about Intellectual Property*, Developing World Bioethics, Vol. 6, Blackwell Publishing Ltd, November 3rd, 2006, p. 166.

⁶⁹⁶ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 120.

⁶⁹⁷ J. CURCI, *The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property*, New York, Cambridge University Press, 2010, p. 215.

⁶⁹⁸ Letter to Professor Narjundaswamy, convener of the Karnataka Rajya Raitha Sangha Farmers’ Organization in: V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 181.

⁶⁹⁹ *Ibid.*

the value of the resource⁷⁰⁰. Furthermore, even worse than the Hoodia case, in this particular episode Indian farmers have been left out from any form of recognition. No benefit sharing agreement had been signed, nor had the Indian farmers been featured in the several patents as inventors, thus making this case even worse, since any sort of recognition of their huge contributions related to Neem have been denied to them. Their efforts and knowledge, and even the values they believe in, are taken away from them and privatized for commercial purposes, which is precisely what biopiracy usually entails⁷⁰¹. To summarize the case in the words of Vandana Shiva:

“Communities have invested centuries of care, respect, and knowledge in propagating, protecting, and using neem in fields, field bunds, homesteads, and common lands. Today, this heritage is being stolen under the guise of IPRs. For centuries, the Western world ignored the neem tree and its properties: the practices of Indian peasants and doctors were not deemed worthy of attention by the majority of British, French, and Portuguese colonists. In the last few years, however, growing opposition to chemical products in the West, in particular pesticides, has led to a sudden enthusiasm for the pharmaceutical properties of neem.⁷⁰²”

⁷⁰⁰ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 181.

⁷⁰¹ *Ibid.*

⁷⁰² *Ibid.*

4. The Enola Bean case

Larry Proctor, president of the seed company POD-NERS, went to Mexico in 1994. While visiting Sonora, a State in the Northwest side of Mexico, Mr Proctor bought a bag of edible dry beans, and decided to take some seeds back home in the US. The episode of the Enola Beans, a type of beans developed by Mr Proctor, is another example of the power of narrative: as a matter of fact, this case has been described by activists and biopiracy experts as a textbook case of biopiracy, while Mr Proctor defines himself as a traditional plant breeder, when fighting biopiracy allegations, although he admitted that the beans, which he later developed, originated from the ones contained in that very bag he brought back from Mexico⁷⁰³. After almost two years of selective breeding in fact, generation after generation, Mr Proctor was able to develop, from the seeds brought back from Mexico, a light yellow bean, which he named “Enola” after his wife’s middle name. Consequently, he filed an application for a US patent, claiming that the distinctive yellow colour of the bean he had developed, had never been bred like that in the US, thus meeting both the novelty and the inventive step criteria required for a patent⁷⁰⁴.

Therefore, in 1999, Mr Proctor was granted the patent for the Enola Bean, and also, a Plant Variety Protection Certificate. Next, POD-NERS, the company of which Mr Proctor was president, started to use their rights derived from the patent, to block the sale of imported beans with the same light yellow colour as the one developed by Mr Proctor and protected by the patent. Nonetheless, the description in the patent was quite vague, thus covering for several traditional bean varieties⁷⁰⁵. Moreover, the patent claim protected also plants produced by growing the seed as well as other plants presenting similar morphological characteristics, and, the breeding methods, used to grow the seed. Interestingly, though sadly, thanks to this patent alone, scholars witnessed that the export sales of light yellow beans from Mexico, dropped almost of 90%, affecting also the sale of other non-yellow beans⁷⁰⁶.

Dutfield notes two aspects, which are quite curious about this patent claim:

“The first is that many bean cultivars exist and the specification provides no evidence that none of these cultivars possess the same characteristics falling within the patent’s rather broad claims. The second is that Mr Proctor employed conventional crossing and selecting breeding methods that are in no way novel. Yet the patent prevents others from using the bean *and* other beans with similar characteristics in their own breeding programmes. None of this would necessarily matter if the owner had not decided to assert the patent aggressively.⁷⁰⁷”

⁷⁰³ ETC Group website: <http://www.etcgroup.org/content/cancel-enola-bean-patent>

⁷⁰⁴ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 115.

⁷⁰⁵ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 53.

⁷⁰⁶ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 116.

⁷⁰⁷ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 55.

As a matter of fact, as underlined by Dutfield, Mr Proctor and his company did not stop at preventing the sale of other beans and plants presenting similar characteristics to that of the patent, but they also filed lawsuits against other companies selling similar products. Indeed, soon after the issuing of the patent, Mr Proctor sued the Tutuli Company, which had been importing and selling Mexican beans, in particular yellow beans called Mayocoba and Peruano, from 1994. Due to the lawsuit, Tutuli suffered financially and so did the small Mexican farmers who had been selling their beans through this firm. Since then, POD-NERS has been suing other small companies and also farmers selling beans throughout the country⁷⁰⁸.

The patent was formally challenged in 2000, when the International Centre for Tropical Agriculture (CIAT), based in Cali, Colombia, sent a formal request to re-examine the patent regarding the Enola Bean, namely patent Nr. 5,894,079, to the US Patent and Trademark Office. In this regard, the contributions of RAFI, the already mentioned NGO, now known as ETC Group, have been quite significant. RAFI experts and activists were among the firsts to denounce the Enola patent as a biopiracy case⁷⁰⁹. As a matter of fact, they filed formal requests to both FAO and CGIAR (the Consultative Group for International Agricultural Research) to investigate the patent and request a re-examination, as it was very likely to be in breach of their 1994 Trust Agreement, which obliges them to make sure that all already known crops germoplasm remain unpatented. Therefore, since CIAT is one of the sixteen research centres supported by CGIAR, once the investigation brought to the conclusion of an alleged biopiracy case, the CIAT filed the formal request of revision of the patent⁷¹⁰.

CIAT's challenge to the patent has been supported by RAFI, whose contributions in this regard again have been important. As a matter of fact, the patent challenge presented also a support letter written by RAFI, affirming that all the fifteen patent claims should be deemed as invalid, since they meet neither the novelty nor the inventive step requirements. Moreover, the letter is particularly critical towards the protection of a shade of colour per se, namely the light yellow shade possessed by the Enola Bean, considered by RAFI experts as a "*mock of the patent system itself*"⁷¹¹. Interestingly, Doctor Joachim Voss, CIAT's Director, referred to the patent as both legally and morally wrong, since there was actual scientific and documented evidence of the fact that Andean communities had developed and later had been using the bean together with Mexican farmers long before the patent was granted. The director also pointed out as evidence, that by being CIAT one of the institutes holding the widest collections of beans in the world, namely 260 varieties of beans, six of its yellow beans had a quite close resemblance with the

⁷⁰⁸ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 55.

⁷⁰⁹ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *Enola Bean Patent Challenged*, January 5th, 2001 available at http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/286/01/news_enolabean.pdf

⁷¹⁰ *Ibid.*

⁷¹¹ *Ibid.*

shade of the Enola bean, thus once again reinforcing the statements claiming that the Enola bean is not new at all⁷¹².

RAFI experts and activists also went to Mexico to collect the statements of Mexican farmers, who declared that they had been using the seeds long before the Enola bean was patented. In particular, according to Miguel Tachna Felix, representative of the Agricultural Association of Rio Fuerte: *“We had been exporting this yellow bean (Mayocaba) and others to the United States for over four years when POD-NERS received their patent -- based on erroneous claims. When they got the patent they sent a letter to all the importers of Mexican beans in the United States, warning that this bean was their property and that if they planned to sell it they would have to pay royalties to POD-NERS. For us, this meant an immediate drop in export sales, over 90%, which affected us tremendously. And it wasn't only one bean variety, but also others, because it created fear among bean importers”*⁷¹³.

Moreover, the objections filed by CIAT and RAFI also underlined the misappropriation of Mexican genetic resources, and a violation of the Convention on Biological Diversity, which affirms that every State has sovereign rights over their own resources, which in this case have been violated. The document concluded by stating that both institutions hoped that the case would go beyond the single withdrawal of the patent, and that it would be a significant step in the fight against biopiracy and life patenting⁷¹⁴.

Unfortunately, the patent challenge was rejected, and the patent and its original fifteen claims are still valid. The US Patent Office did not agree with the many objections raised by CIAT and RAFI, stating that the evidence provided did not destroy novelty, thus allowing the patent to stay valid, even though some experts have declared that allegations of unfair patent tend to decrease its worth⁷¹⁵. Surely, what can be stated is that after 2002, the Enola bean case disappeared from the press, and when in 2008 the challenge was dismissed, it almost went unnoticed⁷¹⁶. What should be noticed instead, is that prior to that date, Mr Proctor quoted in one report that if the patent were to be found invalid, he would *“flood the Mexican market with beans, depressing an already weak bean-price”*, thus threatening a whole country to hurt its economy, as well as its farmers and workers⁷¹⁷.

The Enola bean example truly is, a textbook case of biopiracy. If we recollect the definition provided by Mooney, biopiracy cases should demonstrate: a form of misappropriation or theft, which in the Enola case is exemplified by the sack of beans bought at the market and brought back to the US by Mr Proctor; actions carried out by either an institution or a TNC, in this case POD-NERS; and lastly, the issuing of a patent to establish monopoly control over said resources, as demonstrated by the threats of Mr Proctor

⁷¹² G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 55.

⁷¹³ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *Enola Bean Patent Challenged*, January 5th, 2001 available at http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/286/01/news_enolabean.pdf

⁷¹⁴ *Ibid.*

⁷¹⁵ <https://patents.google.com/patent/US5894079>

⁷¹⁶ Harvest Choice website: http://patentmaze.cougarlaw.com/linked_files/enola_bean_fa_20090714.pdf

⁷¹⁷ G. DUTFIELD, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, London, Earthscan, 2004, p. 55.

and by the losses to the Mexican bean market. It also illustrates how erroneous patents can be damaging for many, especially in cases in which the so called inventor is quite aggressive in its enforcement, as demonstrated by the many threats and lawsuits carried out by Mr Proctor⁷¹⁸. In this case, one of the consequences has been devastating for a whole country, since the closure of the bean market for producers of traditional varieties to the US has actually happened, and has affected the lives of thousands of farmers, who had been living on the sale of beans. The fact that only one patent can have such devastating consequences on so many others should be considered as an alarming signal of the power of the patent system and of the need to reform it in light of the growth of biopiracy cases, and also in light of the fact that biopiracy also entails the violation of human rights, namely cultural rights. Lastly, this examples provides some interesting insights on the violations of biopiracy in regards to the CBD, the international Convention, which should, in part, prevent its spreading.

⁷¹⁸ *Ibid.*

5. The Basmati Rice case

The Basmati Rice is a worldwide known variety of rice, which is commonly bred in South Asia. The region has a long history of breeding of rice, and as Robison reported, in India there have been evidences of the fact, that still between 1.500 and 1.000 BC, Indians were cultivating rice. The Basmati variety is particularly common in India, Pakistan and Bangladesh, and of course farmers and local communities have developed it throughout centuries, through seed selection and conventional breeding practice⁷¹⁹. Interestingly, one of the earliest mentions of the basmati rice, can be found in the epic Heer and Ranjha, which was written in 1766. The most used variety, among its 400 types, is called Basmati 370, a long-grained aromatic rice, and it was developed after years of seed collection and developed in Pakistan and Northern India, in the Punjab area⁷²⁰. For centuries, Punjabi farmers of local communities in this area have nurtured and bred these kinds of plants, which grow best in the Himalayas. They have improved the flavour, the yield and the resistance to diseases, passing on the knowledge from generation to generation⁷²¹.

In 1992, a Texan company, thus US based, called RiceTec, filed the application for a patent covering the Basmati rice lines. Interestingly, RiceTec is an Alvin based company, although its headquarter is not in the USA, but in Lichtenstein. It also has a second subsidiary in the UK. No one less than the Prince of Lichtenstein owned the company at that time, Prince Hans-Adam II. The prince and the company had quite an articulated plan for the Basmati rice, and the patent was a necessary step to achieve it⁷²². Indeed, RiceTec was granted patent number 5.663.484 in 1997, covering Basmati rice lines and grains. Originally, the patent had twenty claims on the protected subject matter, which were to cover the new varieties, plants, grains and breeding methods that researchers claimed to have developed⁷²³. Right after, the company began a scrupulous marketing strategy, by paying supermarkets to display their rice-based products, a special line called “Chef’s Original”, and by asking world famous chefs to create recipes with their rice that would be later sold featuring both the name of the company and of that chef. They started to develop also brand names for the newly patented rice, such as Jasmati or Texmati⁷²⁴.

Fortunately, the granting of this patent immediately draw the attention both of many NGOs and of the Indian government, who were outraged, on behalf of Indian farmers, of the issuing of a patent on a

⁷¹⁹ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 46.

⁷²⁰ *Ibid.*

⁷²¹ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *The Basmati Patent: the (merchant) Prince and the and (Punjabi) Paupers*, March 31st, 1998 available at

<http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/415/01/rafigenobasmatiprince98.pdf>

⁷²² *Ibid.*

⁷²³ M. KOHLS, *Blackbeard or Albert Schweitzer: Reconciling Biopiracy*, Chicago–Kent Journal of Intellectual Property, Vol. 6, Issue 2, April 1st, 2007, p. 115.

⁷²⁴ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *The Basmati Patent: the (merchant) Prince and the and (Punjabi) Paupers*, March 31st, 1998 available at

<http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/415/01/rafigenobasmatiprince98.pdf>

resource which was already known worldwide to belong to South Asian regions. Indian NGOs started fruitful campaigns to draw attention over the issue, not only domestically but also internationally. The government became increasingly concerned with the patent, and the CSIR, the Indian government's agency for science and research, supported the re-examination request for patent 5.663.484 by the Agricultural and Processed Food Products Export Development Authority⁷²⁵. Of course, the patent did not feature the Punjabi as creators or inventors, and no benefit sharing agreement had been negotiated to provide them royalties for their contributions.

These were some of the concerns raised also by RAFI, and precisely by Pat Mooney, again particularly involved in this biopiracy case. Moreover, they criticised the issuing of a monopoly, which granted the company of unprecedented power over a genetic resource, which was actually owned and developed by others⁷²⁶. Many argued that Basmati is to Punjabi what champagne is for the French, and seeing that a TNC could actually usurp the name and the resource and get away with it, was indeed outrageous to so many worldwide. Many have also pointed out the colonialist and racist attitude, which has often marked the North-South relations throughout history, and that the company's attempt to establish control over an Indian name and product, is definitely another clear example of said attitude⁷²⁷.

Following the re-examination, RiceTec agreed to withdraw some of the original twenty claims, reducing them to only five. The claims left regard specific novel rice lines, which might resemble some characteristics of the Basmati rice grains. Plants in the US are commonly deemed as patentable, and therefore the patent remained valid, even if with reduced claims⁷²⁸. In their defence, when challenged for the patent, RiceTec pointed out that the term Basmati had spread from the Punjab region to bordering countries and that neither Pakistan nor India had ever tried to establish control over the use of the name, until the patent was filed. Their claims were brilliantly countered by the US director of RAFI, stating that: *"It's not what India has done or not done that matters here. The issue is Farmers' Rights. International agreements recognize that the farmers themselves have rights here. It is just plain immoral for others to pirate the Basmati name."*⁷²⁹

To this day unfortunately, RiceTec still has a patent, even though reduced, and can still call its rice Basmati, even though it has been covered with the protection granted by geographical indications in

⁷²⁵ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 47-48.

⁷²⁶ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *The Basmati Patent: the (merchant) Prince and the and (Punjabi) Paupers*, March 31st, 1998 available at <http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/415/01/rafigenobasmatiprince98.pdf>

⁷²⁷ *Ibid.*

⁷²⁸ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 47-48.

⁷²⁹ RURAL ANDVANCEMENT FOUNDATION INTERNATIONAL, *The Basmati Patent: the (merchant) Prince and the and (Punjabi) Paupers*, March 31st, 1998 available at <http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/415/01/rafigenobasmatiprince98.pdf>

seven of the Indian states, including Punjab, since it did qualify also under the TRIPS agreement⁷³⁰. Many activists and experts, including Vandana Shiva, have questioned the validity of the patent, since they believe that, again, the novelty and inventive steps requirements have not been fulfilled. According to the Indian expert, a simple-cross breed as the one, which gave as a result the variety protected by the patent, would definitely be known by someone skilled in art, namely plant breeding, thus bringing no inventive step, and that it is definitely not new, since the Basmati varieties and related knowledge had been known in India and Pakistan for centuries. Nonetheless, the evidence presented were not enough to destroy the novelty and obviousness standards of the US Patent Office, deeming the newness of the breeding process as enough for a patent to be issued and maintained⁷³¹.

It is quite sad to witness in how many cases the US Patent Office has been more inclined to grant patents even if evidence was brought regarding existing prior art, and even though biopiracy allegations had been stated. The Basmati, which we all know and maybe use, is yet another example of how biopiracy deprives communities of their knowledge, of their resources and chances of livelihoods. Moreover, when the patent is challenged, it is even more outrageous that evidences are hardly ever enough to dismantle a patent completely, especially in the US. Challenging one patent after the other, due also to the not so satisfying and successful results in some occasions, is not enough to prevent or redress biopiracy. Thus a proper international legal system against biopiracy should be established, also by recognising it as a human rights violation and a revision of the patent system especially in some countries, which is clearly not something so feasible and easy. Indeed, other solutions as the ones indicated in the previous chapter, or even geographical indications recognised worldwide could be a feasible alternative in the meantime.

⁷³⁰ <https://currentaffairs.gktoday.in/geographical-indication-tag-basmati-rice-7-states-approved-02201630297.html>

⁷³¹ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 49.

6. The Jasmine Rice case

I would like to provide now an example of a non-patent biopiracy case, which is nonetheless related to the previous one described. In this case, the kind of rice involved is the Jasmine variety, always typical of Southern Asia, and precisely of Thailand. This example is extremely interesting as it represents a biopiracy case, even without patents, and also featuring the involvement of a research institute, instead of a TNC. As a matter of fact, the Dale Bumpers National Rice Research Centre in Arkansas, developed what was called the “Stepwise Program for the Improvement of Jasmine Rice for the US”, whose aim was that of conducting researches in order to develop a variety of Jasmine rice, which would be easier to grow for US farmers, thus being able to compete with the Thai version⁷³².

The research was carried out in collaboration with the University of Florida Everglades Research and Education Centre, under the supervision of a plant breeder, Mr Chris Deren. The program focused on two kinds of methods, and the aim was that of reproducing the distinguishing nutty scent of Jasmine rice, which, according to the researches, is what customers love about that variety of rice. The methods employed presented diverging directions: one proposed conventional breeding methods, while the second focused more on the use of gamma-ray radiations to induce genetic mutations on the seeds⁷³³. Interestingly though, the Stepwise Program uses two varieties of rice, namely the Khao Dok Mali 105 variety and the Jasmine 85 variety, which were both collected, as the head of the project Chris Deren explained himself, from the International Rice Research Institute (IRRI), which had collected the varieties back in 1966 from provincial regions in Thailand. These two varieties were then brought to the US and modified to suit US farmers and customers⁷³⁴.

It can be stated beyond any doubt, that the US based program was using Thailand’s traditional rice, which was already known and deployed by Thai farmers. Moreover, said farmers, from the Issan indigenous community, living in the region of Thung Kula Ronghai, a particularly flat region in Thailand, had been developing and improving Jasmine rice for centuries. They had never been jealous of their seeds and knowledge, and had shared them with other communities. Robison concludes that for these farmers, and for many other indigenous farmers, their seeds and food are common heritage of humankind, to be conceived as something that has to be shared, cherished and protected, not as something that everybody has at their disposal, without caring for the consequences⁷³⁵.

When Thailand farmers discovered that IRRI had granted access to their seeds to the US institute, and that the threat of patent was a concrete possibility, given previous cases, they decided to act, also because they had felt betrayed by a government institution. Again supported by local and international NGOs,

⁷³² D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p. 95.

⁷³³ *Ibid.*

⁷³⁴ *Ibid.*

⁷³⁵ *Ibid.*

such as GRAIN for example, they protested in front of the office of the Prime Minister in Bangkok, and invoked changes not only for their living conditions in the countryside, but also immediate action to contrast the potential patent over their own resources. More than five million farmers' families in Northern Thailand depend on the breeding and sale of Jasmine rice, and if the US companies were to patent that variety, to compete against the Thai variety, that would cause immense damages to the lives of millions of people⁷³⁶. Pressures from both NGOs and the Indian and Thai press, giving voice to the claims of thousands of farmers, were able to convince both the government and IRRI to act. First, Thailand's Deputy Agriculture Minister Newin Chidchob, stated that the government would immediately act against the US attempts to imitate Thailand's own resources for commercial purposes, by filing a complaint at the WTO. Secondly, the Minister harsh judgement pointed out that the US had for a long time been campaigners of fair competition and fight against imitation, and he wondered how they would act, being the imitator in this occasion a US institution. Moreover, he clearly stated that no one had the right to establish monopoly rights or ownership over Jasmine rice, a treasure of the Thai people⁷³⁷.

In 2001, IRRI issued a press statement, confirming that in 1995 they had shared samples of rice varieties with the Dale Bumpers Rice Research Centre, but that no MTA, material transfer agreement, had ever been signed. Moreover, IRRI clarified that the institute never mentioned that the seeds would later be developed to compete against the Thai rice and exports, thus creating a threatening situation for Thai farmers, who had originally shared the seeds with the institute⁷³⁸. After some pressure from the public opinion, the researchers and the Dale Bumpers and at the University of Florida have publicly agreed to accept terms and conditions dictated by the IRRI, and a MTA has been signed, reinforced also by commitment letters by both institutions. Moreover, Mr Deren has publicly affirmed that it would have been difficult for him to issue a patent concerning Jasmine rice, and that it was not his intention to pursue any patent application⁷³⁹. Even though this case concluded with no great harms, under an economic perspective, for the Thai farmers, the feeling of frustration for being betrayed by a Thai institution will not fade easily, and they do not miss chances to restate their disappointment. Of course, knowing that the seeds, which they, even unwillingly, provided, would have been used against them, to limit Thai rice exports to the US, increases the dissatisfaction towards this episode⁷⁴⁰.

The Jasmine rice case, which features no patent application, provides interesting insight on other features which constitute biopiracy, namely the misappropriation of both GR and TK, and the implications of these activities. As it can be seen in this episode, apart from the clear economic consequences, the theft of the resources, without issuing a benefit sharing agreement or a MTA, as well as the theft of knowledge do

⁷³⁶ GRAIN's website: <https://www.grain.org/article/entries/27-biopiracy-trips-and-the-patenting-of-asia-s-rice-bowl>

⁷³⁷ *Ibid.*

⁷³⁸ D. F. ROBINSON, *Confronting Biopiracy: Challenges, Cases and International Debates*, New York, Earthscan, 2010, p.

96.

⁷³⁹ *Ibid.*

⁷⁴⁰ *Ibid.*

have some clear human rights implications. Aside from the already assessed violation of cultural rights, namely stealing the knowledge and possibly preventing Thai farmers to use it, this could have interfered for example with the right to work, which is another human right under the category of economic, social and cultural rights⁷⁴¹. It has thus been demonstrated, that biopiracy has several human rights implications, which should undoubtedly be taken into consideration, while finding or establishing measures to counter it.

⁷⁴¹ OHCHR website: <https://www.ohchr.org/en/issues/escr/pages/whatareexamplesofviolationsfescr.aspx>

CONCLUSION

The aim of this work has been that of targeting a very specific question: to determine whether if biopiracy is a violation of human rights or not. By now, it should be clear that the answer is a positive one: biopiracy actually is a violation of cultural rights, which are, by all means, human rights. Assessing human rights violations, especially in regards to cultural rights, which are often disregarded compared to other human rights, is extremely important. Seeing themselves deprived of their culture and knowledge, without recognition, and again mortified by the fact that they would have to pay to access and continue using their own resources and knowledge is an affront to the dignity of indigenous people. Biopiracy is not only detrimental for knowledge and resources, but also for the dignity of indigenous communities as individuals and as a whole. Thus, assessing that human rights are in fact violated provides a moral background to the issue, recognising also the significance of human dignity.

Of course, biopiracy is not only a violation of human rights, but a violation to the provisions of the Nagoya Protocol as well. As it was already established, the Nagoya Protocol tends to be more precise in its provision than the CBD, which was criticised for the too broad wording of some of its provisions. For instance, the Protocol establishes prior informed consent as mandatory, even though States, if otherwise determined, can decide not to ask for PIC; while the CBD only mentioned the possibility to request PIC, though they were conceived differently⁷⁴². Thus, biopirates' activities confirm to be in breach of Article 8 of the CBD, and in particular paragraph (j), which calls for protection and control of TK. In regards to the Nagoya Protocol, biopiracy in most cases hinders the provisions of Article 3, calling for fair and equitable benefit-sharing agreements, when GR and TK are involved⁷⁴³. The Hoodia case for instance, demonstrated how benefit-sharing agreements tend to be neither fair nor equitable for the indigenous group involved.

Also, Articles 5, 6 and 7 of the Protocol, which call again for fair and equitable benefit sharing, prior informed consent and mutually agreed terms, are often violated by the activities of biopirates, who do not grant benefits nor do they agree to prior informed consent or mutually agreed terms requirements. Of course, in this case, the accountability and subjectivity of transnational corporations needs to be considered. TNCs are not subjects of international law, as it was already established, thus even though they do commit these violations, they are not responsible under international law. In regards to patent law, inventions resulting from biopiracy in most cases fail to meet the requirements for patentability, namely novelty and inventive step, as it was extensively demonstrated throughout this dissertation.

⁷⁴² Secretariat of the Convention on Biological Diversity, *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Nagoya, October 29th, 2010 available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>

⁷⁴³ *Ibid.*

Not many scholars deny either the existence or the dangers of biopiracy, which is nowadays an assessed and recognised activity, although still far from being acknowledged as a crime by the international community. Very few have disregarded biopiracy as an attempt of victimization by the South, used as a discursive tool to call for more space of manoeuvre in international organizations such as WIPO and WTO⁷⁴⁴. Some authors have analysed biopiracy by looking at the phenomena only from one perspective, without even considering the human rights dimension, and the rights, needs, and desires of indigenous people. These claims have nonetheless been confuted by many papers, and also by the fact that biopiracy is becoming more and more debated also at international level, and a proof of that are the reports send by India and Peru to WIPO, and the paper by the Secretary General of the CBD, calling for joint efforts and action against biopiracy. Also the many case studies presented so far, cannot be limited to “bad bioprospecting” as Chen (one of the very few - if not the only – authors who do not believe that biopiracy actually exists) refers to, because as it was already demonstrated, bioprospecting only entails exploration and no commercial purposes⁷⁴⁵.

Indeed, biopiracy is a growing reality, which needs to be tackled and recognised by States, communities and the international community as a whole. Only then, measures and solutions could actually become effective. Moreover, solutions should also take into consideration the human rights perspective, and all the human rights implications of biopiracy should be taken into account when drafting possible solutions. Said solutions should not only be aimed at redressing or preventing biopiracy, but should feature aspects aimed at restoring the dignity of indigenous people and at increasing their capacity building and awareness, without lacking to consider the profound, embedded and crucial value that knowledge and culture have for the identity and way of living of indigenous people.

Every case illustrated so far, served as a demonstration of the fact that misappropriations of traditional knowledge are a fundamental trait of biopiracy and that they do entail human rights violations. To be exact, every case outlined so far entailed a human rights violation, specifically of cultural rights, and precisely, again, of the right to access and enjoyment of cultural heritage. Having established this fact, it might be important to restate the observations of the Human Rights Committee, exemplified in their General Comment 23:

“The enjoyment of the rights to which article 27 relates does not prejudice the sovereignty and territorial integrity of a State party. At the same time, one or other aspect of the rights of individuals protected under that article - for example, to enjoy a particular culture - may consist in a way of life,

⁷⁴⁴ J. CHEN, *There's No Such Thing as Biopiracy... and It's a Good Thing Too*, *Mc George Law Review*, Vol. 37, 2006, p. 25, available at <http://nationalaglawcenter.org/publication/chen-theres-no-such-thing-as-biopiracy-and-its-a-good-thing-too-37-mcgeorge-l-rev-1-32-2006/>

⁷⁴⁵ *Ibid.* p. 4.

which is closely associated with territory and use of its resources. This may particularly be true of members of indigenous communities constituting a minority.⁷⁴⁶

The article, to which the HRC refers here, is article 27 of the ICCPR, stating that if minorities existed within the territory of one State, they should not be prevented from enjoying their own culture. The article was criticised for its vague wording, and consequently HRC released this general comment, which is of particular importance in the context of this dissertation. As a matter of fact, the comment widens the provision of Article 27 also to indigenous communities, and it states that, in many occasions, the enjoyment of a particular culture might entail also a way of living⁷⁴⁷. Moreover, it could be stated almost beyond doubt, that even more than a way of living, intangible cultural heritage in many occasions represents the very identity of those people.

The previous biopiracy cases have clearly demonstrated, how in many occasions the misappropriations of TK, the thefts of knowledge and resources have prevented the indigenous communities involved to live as they used to, and have inevitably deprived them of part of their identities. The Enola case for instance, demonstrated how a single patent resulting from and at the same time, determining a biopiracy activity, was able to put at risk, threaten and damage the ways of living of thousands of Mexican farmers, whose livelihoods depended on selling beans⁷⁴⁸.

Therefore, biopiracy clearly constitutes an impediment to the fulfilment of the rights described within Article 27 of the ICCPR, since these rights do refer also to indigenous people, who may invoke these rights as General Comment 23 by HRC clearly established⁷⁴⁹. Moreover, Article 15 of ICESCR, following the path already laid down by Article 27 of the UDHR, stated that everyone has a right to freely participate in their cultural life of choice, and that everyone has the right to benefit from scientific development. It could be easily concluded, that all the aforementioned case studies are clear illustrations of how the right to benefit from scientific development is hindered, since in almost every case, no form of benefit was shared with the indigenous communities or local groups involved. For, instance in the Hoodia case involving the San, the community was prevented to use their own knowledge, while the benefits, which they were supposed to receive from the established agreement, were not at all fair nor equitable⁷⁵⁰. The right to maintain, control, protect and develop cultural heritage, both tangible and intangible, is enshrined in two already mentioned and crucial documents: UNDRIP and the ILO Convention No. 169. Article 31 of UNDRIP, although not a legally binding document, states that indigenous people have the

⁷⁴⁶ United Nations Human Rights Office of the High Commissioner, *Human Rights Committee, CCPR General Comment No. 23: Article 27 (Rights of Minorities)*, April 8th, 1994, paragraph 3.2.

⁷⁴⁷ *Ibid.*

⁷⁴⁸ ETC Group website: <http://www.etcgroup.org/content/cancel-enola-bean-patent>

⁷⁴⁹ United Nations Human Rights Office of the High Commissioner, *Human Rights Committee, CCPR General Comment No. 23: Article 27 (Rights of Minorities)*, April 8th, 1994, paragraph 3.2.

⁷⁵⁰ World Intellectual Property Organisation, *Case Study: Hoodia Plant*, January 2008, available at https://www.wipo.int/export/sites/www/academy/en/about/global_network/educational_materials/cs1_hoodia.pdf

right to maintain and exert some control over their cultural heritage, as well as to safeguard it and to further its development. At the same time, Article 5 of the ILO Convention reiterates the same provisions. Although not enshrined in any other convention tackling with human rights, it is important to remember that the independent experts in the field of cultural rights, have in more than one occasion restated that the right to maintain, control and develop cultural heritage is a fundamental feature of the enjoyment of culture, thus resulting in a human rights issue⁷⁵¹.

Again, it could be easily concluded that all the aforementioned cases constitute a violation of the right to maintain, control, protect and develop cultural heritage, due to the fact that the patenting of TK hinders its use and access for others, a part from the owner of the patent. Since the owner of the patent usually is not an individual belonging to the indigenous group who actually developed and created the knowledge, the rights derived from the patent do hinder the possibility of the actual owners (the indigenous community) to maintain control, safeguard and further develop their knowledge, which I repeat, is a fundamental element constituting cultural heritage. Therefore, the cultural rights of indigenous people are clearly violated, when biopiracy occurs, and the cases described so far are all examples proving the truthfulness of this statement.

At this point, having established and provided examples of the fact that biopiracy does constitute a violation of human rights; one might ask if there are remedies for human rights violation. The issue of reparations for human rights violation is rather complex. At the international level, a legally binding instrument, granting reparations in case of human rights violations, does not exist. There is though, a non-legally binding instrument, the so-called Basic Principles, which was adopted by the UN General Assembly in 2005. The Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law (BPGs), as the title suggests, only cover gross human rights violations⁷⁵². Although the BPGs do not provide a definition of “gross”, it does state that gross violations should constitute crimes under international law. At the beginning of the drafting process of the BPGs, the intent was to create a document covering all human rights violations. Nonetheless, due to interpretational problems, the list of human rights violations was limited to gross violations, which had to be considered as constituting an affront to human dignity, due to their very nature⁷⁵³.

⁷⁵¹ United Nations Human Rights Council, *Report of the independent expert in the field of cultural rights*, Farida Shaheed, A/HRC/17/38, March 21st, 2011, p. 11.

⁷⁵² OHCHR: <https://www.ohchr.org/en/professionalinterest/pages/remedyandrepairation.aspx>

⁷⁵³ E. DESMET, *The Un Basic Principles And Guidelines On The Right To A Remedy And Reparation: A Landmark Or Window- Dressing? An Analysis With Special Attention To The Situation Of Indigenous Peoples*, South African Journal on Human Rights, January 2008, available at https://www.researchgate.net/publication/292396238_The_UN_basic_principles_and_guidelines_on_the_right_to_a_remedy_and_reparation_a_landmark_or_window-dressing_An_analysis_with_special_attention_to_the_situation_of_indigenous_peoples?enrichId=rgreq-15836ac16ffb4bef5d77173f6eae788-XXX&enrichSource=Y292ZXJOYWdlOzI5MjM5NjIzODtBUzo1NDM2NTI1OTQzMTkzNjBAMTUwNjYyODI4NzAxNg%3D%3

“According to the explanatory comments, the focus on gross human rights violations, ‘which involve the protection of life, physical integrity and other matters essential to the human person and to human dignity’, was not ‘intended to minimize the importance of other violations of human rights law, but merely to distinguish those violations which, for the purposes of these principles and guidelines, require the implementation mechanisms provided herein’.”⁷⁵⁴

Human rights violations do differ according to the level of atrocity, and gross refers to the extent to which said violations affect human dignity. The then Special Rapporteur for the Commission of Human Rights, Theo van Boven, submitted a report, when the BPGs were being drafted, in which he tried to outline what gross indicates. He claimed, that even though no agreed upon definition of the term exists, the literature seems to have agreed on the fact that the term gross does qualify a violation, and that usually it refers to either genocide, or apartheid, as well as to systematic or mass human rights violations⁷⁵⁵. Nonetheless, to safeguard the rights of the victims of other human rights violations, which do not fall under the category of gross, it was added as principle 26 of the document, that the BPGs shall not prevent or prejudice the right to remedy and reparation for all victims of other human rights violations⁷⁵⁶.

Therefore, if an individual were to seek remedy for a human rights violation, at the international or regional level, the available solutions are not many. Although there are a few international mechanisms granting the protection and promoting human rights, such as OHCHR, UNHRC and the Committee on Economic, Social and Cultural Rights; as well as some regional mechanisms such as the European Court of Human Rights, the Inter-American Court of Human Rights and the African Court on Human and People’s Rights, a part from the first one, namely the European Court of Human Rights, these mechanisms and courts do not grant remedies for individuals, who have seen their rights violated⁷⁵⁷. Hence, as Davis and Whytock affirm: “*the international human rights system depends on domestic enforcement*”⁷⁵⁸. Interestingly, the two authors also notice that States are reluctant to recognise a community as victim of human rights violations, which would be the case of indigenous communities. States, according to the two authors, have a tendency not to recognise collective rights as human rights. As it was already stated, in the case of indigenous people, knowledge tends to be collectively owned

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⁷⁵⁴ *Ibid.*

⁷⁵⁵ T. van BOVEN, Special Rapporteur for the Commission on Human Rights, *Study concerning the right to restitution, compensation and rehabilitation for victims of gross violations of human rights and fundamental freedoms*, E/CN.4/Sub.2/1993/8, July 2nd, 1993, available at http://hrlibrary.umn.edu/demo/van%20Boven_1993.pdf

⁷⁵⁶ OHCHR: <https://www.ohchr.org/en/professionalinterest/pages/remedyandrepairation.aspx>

⁷⁵⁷ S. DAVIS and C. A. WHYTOCK, *State Remedies for Human Rights*, Boston University Law Review, Vol. 98, 2018, p. 407, available at <https://www.bu.edu/bulawreview/files/2018/03/DAVIS-WHYTOCK.pdf>

⁷⁵⁸ *Ibid.*

within their communities, thus making it hard to find one single author in the case of patents, or a single victim, in the event of biopiracy⁷⁵⁹.

Here again, the significance of the role of the State becomes even more evident. States, which are the original subjects of international law; which have the duty to create an environment in which the aforementioned criteria of availability, accessibility, acceptability, adaptability and appropriateness are met, in order to allow individuals to fully enjoy the right to take part in cultural life; which according to the CBD are in charge of assessing who can or cannot access genetic resources and how; have a fundamental role in assuring that the human rights of their citizens are respected and protected. Unfortunately, some of the case studies have provided examples of how States or States' agencies are sometimes compliant with biopiracy activities, thus not granting the protection and respect that every indigenous individual deserves as a human being. Many cases have been reported of compliant States in human rights violations, thus making it even harder for an individual to seek domestic reparation or remedies for human rights violations⁷⁶⁰.

Another controversial element which I would like to point out, is the fact that none of the examples described within this dissertation, nor any other biopiracy case which I might have read while drafting this thesis, provided insights on the consequences for erroneous granting of patents. While many of the case studies here analysed have demonstrated how hard it is in the USA to have a patent withdrawn, even if evidences of prior art are presented, all the cases show no consequences for those TNCs, which had been granted a patent later withdrawn. They do not have to pay compensation for it to the actual authors; they just lose their rights over the "invention". Article 32 of the TRIPS does state: "*An opportunity for judicial review of any decision to revoke or forfeit a patent shall be available*", but it does not entail any consequence for the withdrawal of patents⁷⁶¹. Thus, international agreements and treaties do not mention any reparation for the actual author, whose knowledge has been misappropriated through a patent.

The picture, which has been drawn so far, is a very complex one. The case studies presented have described the dynamics of biopiracy, and how hard it is to obtain any form of reparation for the victims. The most effective existing solutions so far are the preventive ones, such as bio-community protocols or the TKDL. These defensive tools, such as also the creation of ad-hoc groups targeting biopiracy, have been the most effective to this moment. They will only be efficient and effective though, as long as States will be interested in protecting their resources, knowledge, and communities⁷⁶². This is why, again, the

⁷⁵⁹ V. TAULI-CORPUZ, *Biodiversity, Traditional Knowledge and Rights of Indigenous People*, Penang, Jutaprint & Third World Network, 2003, p. 7.

⁷⁶⁰ S. DAVIS and C. A. WHYTOCK, *State Remedies for Human Rights*, Boston University Law Review, Vol. 98, 2018, p. 408, available at <https://www.bu.edu/bulawreview/files/2018/03/DAVIS-WHYTOCK.pdf>

⁷⁶¹ World Trade Organization, *Agreement On Trade-Related Aspects Of Intellectual Property Rights* (TRIPS Agreement), Annex IC of the Marrakesh Agreement establishing the World Trade Organization, Morocco, April 15th, 1994, available at https://www.wto.org/english/docs_e/legal_e/27-trips.pdf.

⁷⁶² D. F. ROBINSON, *Biopiracy and the Innovations of Indigenous People and Local Communities*, p. 91, in P. DRAHOS and S. FRANKEL, *Indigenous People's Innovations*, Canberra, Australian National University E Press, 2016.

role of States is so fundamental in the fight against biopiracy, since States have the ability to create norms at the international level, or an international cooperation system, which could stop, and not only prevent biopiracy once and for all. As a matter of fact, as Marrella and Carreau notice, States are both the original subjects as well as the creators of the norms of international law⁷⁶³. Hence, they have the ability to develop a more accurate international legal system targeting biopiracy.

Fortunately, when States do lack either the interest or the ability to protect the rights of their citizens, NGOs do come in handy. Indeed, one of the problems related to the Nagoya Protocol for instance, is the difficulty in implementing its provisions for many developing countries, which thus lack the ability to protect the rights enshrined and enforce the mechanisms established under the Protocol. The case studies have been extremely important in underlying the role played by NGOs, not only in the fight against biopiracy itself but as a means both of protection and promotion of rights, and as an awareness-raising instrument. GRAIN, ETC, Third World Network to name a few, have provided significant contributions in fighting the erroneous granting of patents and biopiracy, but also in raising awareness internationally, and also domestically, on two different levels: the governmental and the local one. Thanks to their efforts, indigenous groups have gathered together and raised their voices over the injustices they had suffered.

Raising awareness is another fundamental feature, which transcends the single aspect of biopiracy. As a matter of fact, raising awareness among indigenous people of their rights and their possibilities should not be limited only to the case of biopiracy. As Teran underlined, in relation to biopiracy, raising awareness in particular over the Nagoya Protocol's provisions, among indigenous people, could be an effective means to further the implementation of the Protocol itself, as well as a tool, of course, to prevent biopiracy⁷⁶⁴. Nonetheless, what is important about this aspect is that raising awareness should not only be limited to the threats, damages and consequences of biopiracy, but also widened to indigenous people's rights in general, which is fundamental in helping their development not only as individuals but also as communities. Being conscious about their rights and duties, allows them to be aware of what they can do, but mostly importantly, of what others should not enforce on them, thus helping them develop more consciously. Stronger and more aware communities will surely be an effective and crucial instrument in the fight against biopiracy, since they are the primary victims of this illicit activity.

I would like to conclude this dissertation, with a very personal but well thought comment. For months, I have dedicated myself to the study of biopiracy, and to finally assessing that it is a violation of human rights. I have read books, articles, reports and testimonies of how biopiracy unfolds, how the consequences of this activity affect indigenous communities, how States deal with it, and so forth. I have read several solutions proposed by scholars and experts, I have read papers promoting either the defensive

⁷⁶³ D. CARREAU, and F. MARRELLA, *Diritto Internazionale*, 2a edizione, Milano, Giuffrè Editore, 2018, p. 333.

⁷⁶⁴ M. Y. TERAN, *The Nagoya Protocol and Indigenous People*, *The International Indigenous Policy Journal*, Vol. 7, Issue 2, April 2016, p. 16.

or the positive protection of traditional knowledge, I have read about solutions which have been significantly effective in the fight against biopiracy, and about other which have not delivered the hoped results. I have tried to unravel the complex issue of patents and intellectual property law, and I still have understood only a small part of all of this. Though one thing is quite clear to me: as long as individuals will keep considering the resources that the world provides, the knowledge that people share and the different cultures as a commodity, as a tradable value, as something to make profit from, there is no long-lasting or effective enough solution. As long as other cultures and resources are seen and considered as a means to exploit, rather than a value which transcends the mere economic one, all the solutions provided at national, regional and international level will hardly be enough. This is why, in my very personal opinion, adding a human rights perspective to the issue of biopiracy is so important. Assessing that biopiracy violates human rights not only of individuals, but of whole communities, should be an alarm of how potentially dangerous these kind of activities are, and at the same time, it should reinforce the urge to find solutions which promote, respect and safeguard human rights, which are the values upon which the modern-day world was founded, and which should be shared by all the communities. A long lasting solution should be that of considering others, their knowledge, culture, ways of living and so forth as a deep, fundamental, enriching human value, detached from economics. Indeed, this thesis has tried to point out, that biopiracy is first and foremost a cultural and a human rights' issue.

To put it in the words of the most renowned expert on biopiracy, Vandana Shiva, it is fundamental to promote a culture of diversity, in which others are cherished and that would promote peace, instead of exploitation:

“An intolerance of diversity is the biggest threat to peace in our times; conversely, the cultivation of diversity is the most significant contribution to peace—peace with nature and between diverse peoples. The cultivation of diversity has to be a conscious and creative act, intellectually and in practice. [...] The cultivation of diversity involves reclaiming the right to self-organize for those coerced into living by imposed measures. For the dominant groups of nations and humans, who impose their priorities and patterns on the living diversity of peoples and other species, the cultivation of diversity involves seeing the “capacity and intrinsic value of the “other”—other cultures and other species. It involves giving up the will to control, an imperative rooted in the fear of that which is free, a fear that gives rise to violence. The cultivation of diversity is, therefore, a nonviolent response to the violence of globalization, homogenization, and monocultures.”⁷⁶⁵

⁷⁶⁵ V. SHIVA, *Biopiracy: the Plunder of Nature and Knowledge*, Berkley California, North Atlantic Books, 2016, p. 229.

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