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Resilient Communities to face Land Grabbing

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CONTENTS

Abstract

The topic of this dissertation is resiliency. More specifically, resiliency is considered in this work as the enabling condition for rural communities in Uganda to face land grabbing. The aim of this final dissertation is to prove that land grabbing is a further exacerbator undermining resiliency, thus the capacity of the affected people to overcome not only the difficulties this global phenomenon is causing, but also other challenges such as climate change, local socio-political conflicts, and the dire socio-economic conditions. All these aspects set Uganda into the category of the one of the poorest countries in the world, with 75.6% of the population living on less than $2 a day. For this reason, this work deals with three specific cases of communities that have been affected in different degrees by land grabbing activities in Uganda. In order to define the degree of resiliency of the people and natural settings of the three study cases, six enabling resilient conditions are provided as a tool-kit for the analysis of the such cases.

Introduction

It's 6 a.m. in a village in the Karamoja region of Uganda. While driving to the village some boys and girls dressed in school uniform were walking to school, which is kilometres away from their village. Arrived at the village some boys, who are not school attendants, and young men have already left with the cattle; they have brought a stick with them, some seeds and a little bottle filled up with some water. The cattle will move to greener areas where water sources are available. When the boys and men will come back home depends on the cattle needs. The important thing is that the cattle survives so the village can survive too. Women, usually the oldest, remain in the village to prepare some food to feed the little ones and look after the hens and chicken in the kraal. The young girls, who are not at school, are preparing empty tanks to set on their heads to be filled with water during the day. Their role is to collect water and help looking after the children. When it is time to leave, these girls take their little brothers and sisters with them, often wrapped up on their back or chest. Young boys, who have not already gone away with the cattle, are given a stick and are taught how to hunt and herd. A group of men is sitting under a tree talking and discussing about how the village must be managed, while the younger ones are out with the cattle or hunting as the little boys do.

This is a testimony of how people in a kraal in Karamoja, one of the poorest regions in the world, adapt and persist in the face of everyday challenges. However, this is a simplified daily routine followed by many other families, pastorals, indigenous groups in the other Ugandan regions. In Uganda, poverty is widely spread as well as illiteracy levels: these are two factors that are connected one with other and the example above is a proof of this link. Until poverty is rooted, all family members have to contribute to the food and water supply and, unless enough water and food are provided, no surplus can be collected and sold; this in turn translates in no money available to pay for school fees. What is implicit in all this is the fact that people rely on natural resources such as water, timber, cattle, herd, crops and so on. They are tightly bound to such resources, which not only are their means of livelihood but also the pivotal elements around which their daily lives rotate: each member has a role in managing specific natural elements such as water, crops and animals. Natural resources are crucial in regulating the social network of Ugandan communities. In this work this tight bond between nature and human beings and the interconnections among them will be analysed and defined as the interactions defining a socio-ecological system (SES).

However, such resources, and therefore the communities, are constantly threatened by several issues all interconnected: constant growth of population characterises Uganda with an average annual increase of around 3.5% (Macrotrends, 2022); climate change is shaking ecosystem's equilibrium and reducing resources availability. The list could go on, but the focus of this work is on a specific issue, that is a humanly induced phenomenon called land grabbing. Land grabbing is depriving so many people of their land and the resources available, forcing many people to find other ways to survive, persist and adapt. Land grabbing activities are also reducing the capacity of land and ecological systems more broadly to remain fertile, provide people with food and vital resources. The capacities to adapt and persist are attributed to both human beings and natural systems and these define the resilience of a social-ecological system. Resilience is therefore a key term in this work and will be the topic of the first chapter. More specifically, the first chapter will provide a definition of what resilience is; then it will define the elements that compose a resilient socio-ecological system, to then explain how land grabbing undermines SES's resilience. This last point will be covered by providing some examples of how land grabbing can hit each of the elements composing a SES. The second chapter will specifically deal with land grabbing by following a macro-to-micro approach: meaning that, the focus of the analysis will be, first, on how the phenomenon of land grabbing is spread all around the world, then, on the regional distribution, and finally, on Uganda. Uganda has experienced land insecurity since colonial times and in the last two decades an increase in the number of land deals has been detected. For this reason, as well as for my personal and direct experience as a volunteer in this country, the focus will be on Uganda and on three specific cases of communities which have proven resilient in the face of land grabbing. The second chapter will conclude by providing six enabling resilience conditions that can help a SES to remain or become resilient. In chapter three, such conditions will be used as a toolkit for the analysis of the three study cases, which will be contextualized first, and deeply analysed after. To conclude, a final consideration about the main finding and recommendations are provided in the conclusion.

CHAPTER 1

1.1. Defining resilience

The concept of resilience has been widely used among scholars and various disciplines but, in the end, these tend to converge. Given the purpose of this work, which is to define the degree of resilience of specific social-ecological systems (SESs), this section aims at focusing on the concept of resilience applied to the study of SESs. For this purpose, this section is structured as follows: firstly, the concept of resilience is defined by providing the genealogical background of this concept to understand how this has been used in various disciplines before being applied to the study of social-ecological systems. Then two definitions of resilience, provided by two groups of scholars, namely scholars from the Stockholm Resilience Center[1] and Ostrom and her collaborators, are reported and analyzed. These last two definitions are chosen because these specifically deal with the concept of resilience applied to SESs.

Before providing a definition of resilience and the explanation of its characteristics, it may be useful to report the various uses of this term in academia to see how in a way these uses converge in meaning. This concept was first studied in engineering and physics focusing on the energy system, to then be transferred to other individually focused disciplines as in the case of psychology. Resilience has also been applied in the contexts of development, such as community development and poverty alleviation, as well as in ecology to study the stability and sustainability of ecological systems (Hollings, 1973). Despite each field focuses more on some aspects of resilience than in others, these should be viewed as complementary within the study of social-ecological systems. In this regard, resilience is based on the assumption that people and nature are tightly bound, for this reason the social and ecological components must be viewed as coupled: on the one hand, social resilience "is the ability of human communities to withstand and recover from stresses, such as environmental change or social, economic or political upheaval" (Stockholm Resilience Center), as well as the capability to adapt in the face of such issues by developing innovative solutions for a more sustainable future; on the other hand, a resilient ecosystem is able to "withstand shocks and surprises and to rebuild itself if damaged" (Stockholm Resilience Center). Considering social and ecological resilience

[1] As its name suggests, the Stockholm Resilience Center is an international research center focusing on resilience and sustainability. This was launched in 2007 and has its base at the Stockholm University.

intertwined is essential to understand how SESs are composed and the way its components interact among them; for this reason, when it comes to define whether a SES is resilient, both its social and environmental conditions must be considered. Having said so, a definition of resilience from the Stockholm Resilience Center may be provided:

> Resilience is the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about the capacity to use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking. Resilience thinking embraces learning, diversity and above all the belief that humans and nature are strongly coupled to the point that they should be conceived as one social ecological system (n.d.).

This general definition incorporates what Professor Steve Lade, a researcher at Stockholm Resilience Center, has described as the three main capacities of resilience, namely, the capacity to persist, adapt and transform, as well as Ostrom and her collaborators' considerations about this concept. More specifically, the capacity to *persist* means to be able to resist and recover from unexpected, sudden and shocking changes; in other terms, it defines the amount of change a system can support before transiting into another state. According to Ostrom and her collaborators, the capacity to persist may be strictly connected to social rather ecological systems: from this perspective, being able to persist is highly dependent on the institutions' capacity to provide "the tools for social cooperation that allow for quick and effective response to possible changes" (Aligica & Tarko, 2014, p. 56). Let's assume a community was hit by an earthquake; the persistence of the community, and the SES more broadly, is seen in the way these face the environmental disaster. Being persistent depends on factors which can be both internal to the SES, meaning on those capacities strictly connected to the nature and structure of the SES, but also external, thus the strength and duration of the external perturbance. In the case of a community and ecosystem, their capability to resist in the face of an earthquake can depend on the following factors: first of all, the size and duration of the external shock, in this case the earthquake, has to be such that the damaged socio-ecological system can cope and resist. Secondly, the socio-ecological system has to be strong enough to bare the shock; for instance, in order to be considered strong, an ecosystem should be one rich in biodiversity and not previously deteriorated, while the community members must be a cooperative and tightly knit: the more cohesive the society and the social institutions are, the more prepared for facing external shocks they are. For instance, the communities of Chile and Haiti managed to recover

differently from earthquake Katrina: even if Chile was hit "500 times more powerful than Haiti, it suffered about 300–400 times fewer deaths (several hundred rather than a 230,000)" (Aligica & Tarko, 2014, p. 56). This proves that Chile had a larger capacity to persist, absorb the damages and recover, thanks to the speed of recovery of its institutions and the nature of its pre-existing social networks (Aligica & Tarko, 2014). Turning to the capacity to *adapt*, what Ostrom defines as "adaptability", this is the ability of actors within a system to self-organize to influence and manage resilience. To better understand this capacity a different example may be provided. When fertilizers are intensively used for crop production, it is highly likely that the chemicals within fertilizers run into the waterways and reach the lakes nearby; when this occurs, the biodiversity of the lake is compromised but some actions may be undertaken to prevent this happening or causing further damages. For instance, the reduction of chemicals running within the fishing lake can be a consequence of a ban on fertilizers or of the substitution of the chemicals with less polluting substances: these are two examples of how actors have the power to dominate the SES and, more importantly, have the tools to manage the system more sustainably. Managing a system in a sustainable way means to act and use the resources available in a way that these are not exploited or depleted to the extent that the stability of the SES is compromised. When this occurs, a so-called *threshold* is likely to be overpassed: in concrete terms, the threshold could be the death of all fish in the lake due to polluted water with spillover consequences on the socio-ecological components, namely the human beings and the natural resources on which they rely. Finally, the capacity to *transform* is about creating a new system given the unsustainability of the previous: this may have become unsustainable because of social, ecologic, economic or political conditions that led to unbearable circumstances, which in turn undermined the stability of the SES's components. An example of transformation may be the case in which a local small-scale production of crops for local families subsistence is forced to stop, find alternative subsistence activities or move elsewhere. This may occur because increasingly frequent floods undermined the productivity of the fields previously used to grow fruits and vegetables. The capacity to transform in this case is seen in the way the local communities not only adapt to this circumstance but also "create untried beginnings from which to evolve a new way of living": for instance, the community can install irrigation systems that allow the water to flow; in addition, they might as well decide to plant different crops, which are more suitable to the changing weather conditions and the different ecosystem. As a matter of fact, when facing frequent droughts, the ecosystem transforms too; this can be seen from the

appearance of new plant and animal species at the expense of others, which could not stand the new weather conditions. This is a transformation that leads to the establishment of new agricultural activities and resources that need different cultivation techniques and resource management. However, this example shows how the community has been able not only to persist and adapt to the new weather conditions, but also to create activities that render the whole system more stable and resilient when external shocks such as floods occur. A further example of transformability is creating new jobs and ways of living in rural areas where existing socio-economic and ecological situations have become unsustainable: this may be done through the introduction of ecotourism that not only attracts visitors in natural areas but also pays attention to undertaking activities that do not undermine the terrirory and the locals' living conditions.

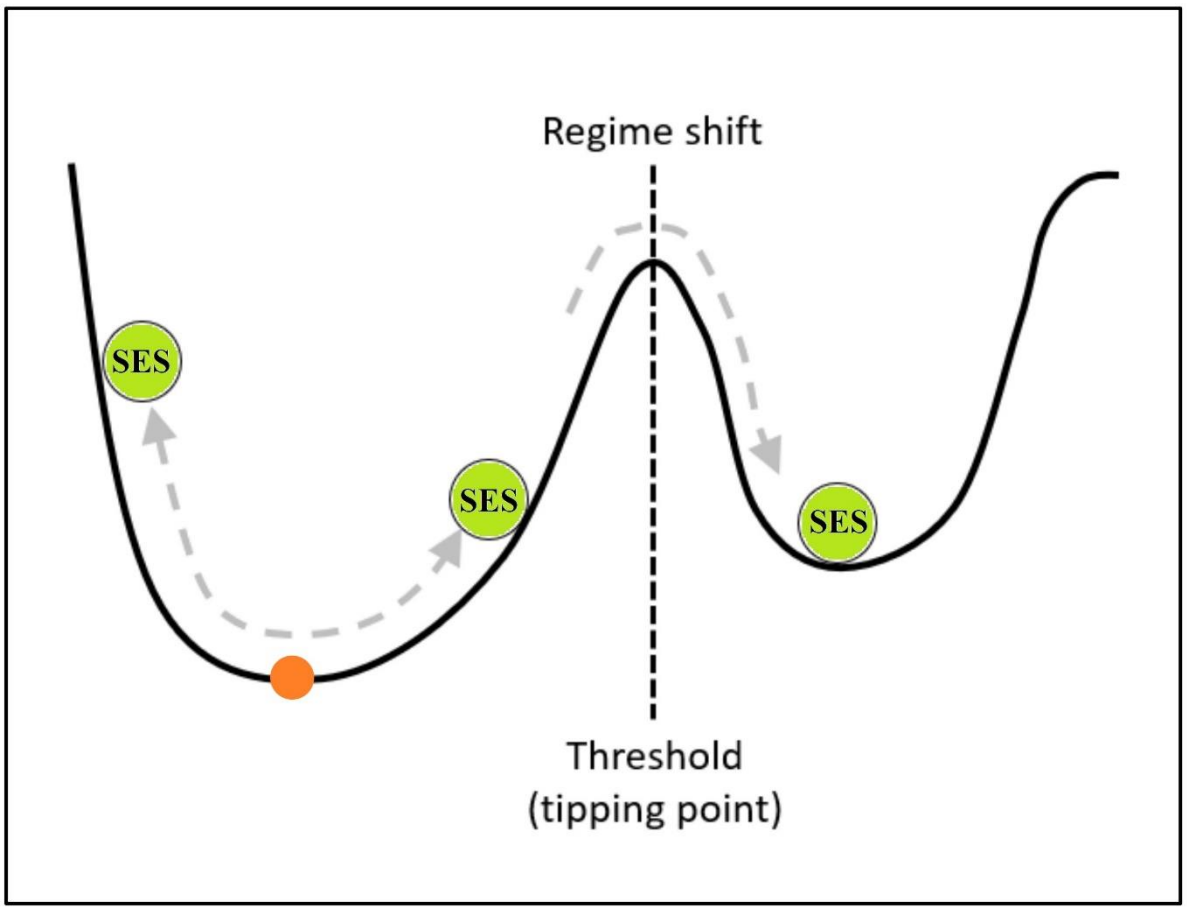
Social-ecological systems are not stable in their nature and changes can be internal or external as in the case of the earthquake. This means that each of the three capacities becomes useful in specific circumstances: for instance, when a short-term threat, such as the damages provoked by an earthquake, can be solved with quick solutions and actions, the capacity to persist is useful enough to allow the SES to bear the shock. Adaptability, as in the case of the ban on or reduction of fertilizers, is a solution that has a medium-term perspective, meaning that it looks at absorbing the present damages, while preventing future damages. However, there are systems that undergo such strong shocks that render the SES an undesirable place to live or, in worst cases, alter an entire ecosystem: in this case, transformability becomes necessary. While the first two capacities work at the level of the same SES, transformability alters the nature of a system leading to the consolidation of a completely different one. (Walker, Holling, et al., 2004). The next section provides a figurative and more concrete way widely used among scholars to explain resilience: this will be done throughout the use of the *ball-and-cup metaphor*, which will turn useful throughout this work.

1.1.1. *A figurative way to explain resilience: the cup-and-ball metaphor*

The capacity to persist, adapt and transform implicitly suggests a response of the environment and the living beings towards a threat or perturbance, which may be internal or external to the SES; as a matter of fact, real world SESs are constantly undergoing changes, which may be natural or induced. To clarify such a statement, the ball-and-cup metaphor has been used by scholars as a figurative way to explain the concept of resilience.

In Figure 1 resilience of a social-ecological system is represented by a ball-and-cup diagram: this is composed of a curved line, that is the landscape, and a ball, that is a system, which may be an individual, a community or an ecosystem. In this case, presuming that nature and human beings are tightly bound, the ball must be considered a social-ecological system, in which both the ecological environment and the people within it are constantly "rolling" on the landscape. The line representing the landscape is not flat; on the contrary, this has lower points which figuratively represent the bottom of the "cup". In the diagram the cups are two, each of them representing two systems of state in which the SES/ball can move into and settle. This means the SES can roll and be shifted into an alternative state which is different from the previous one: these differences are represented in Figure 1 through the variation in depth and width of the cups. The depth and width of the cup defines the degree of resilience of the social-ecological system, thus its capacity to remain in the cup despite the internal and external shocks to which the SES is constantly exposed to. The *equilibrium state* of the SES is exactly at the lower point of the basin or cup, represented with the orange dot in Figure 1. However, all real-world SESs are "continuously buffeted by disturbances, stochasticity, and decisions of actors that tend to move the system off" the equilibrium state (Walker et al., 2004); for this reason, the ball never settles at the lower point of the cup.

Figure 1 - *The ball-and-cup metaphor to explain resilience*



Note 1: Adapted from "Landscape as a Scaling Strategy in Territorial Development," by R. Plant, 2022, *Territorial Approaches to Sustainability*, 14(5), 14, 3089, p. 6. CC 2022 by MDPI. (https://doi.org/10.3390/su14053089).

In Figure 1 there is also a line dividing the two cups: this line represents the *critical threshold* or *tipping point* that the SES can surpass if the intensity and frequency of the perturbance is such to make the SES transit into a new state or regime. More concretely, this shift into a new regime may be exemplified by a forest that turned into grassland due to human induced deforestation or a fire. If compared to the forest, the grassland is poorer in biodiversity leading animals and species to move elsewhere or adapt to the new circumstances; in Figure 1, the differences in the depth and width of the cup represent exactly these regime shifts. The degree up to which the SES can cope to shocks and keep within the same regime or cup is given by two factors: firstly, the capacity of the SES and its composing elements - land, people, species, biodiversity - to persist and adapt when perturbances occur. Secondly, the severity of both internal and external shocks that can undermine the resilience of the SES and its components,

thus forcing the SES to settle into a new state. More concretely, internal shocks may be driven by ecological changes such as plant and animal succession, but also by human induced actions such as practice management and land policies; while, external shocks can be driven by rainfalls, drouths or exchange rates (Walker et al., 2004).

This means that, when the perturbance is strong and the SES's components exposed, thus not ready to face such a hazard, the SES shakes up to the point that crosses the threshold and settles in a new biological situation or state. This shows that the SES has been under pressure, reducing its resilience; for this reason, the new cup is less deep and wide. However, not only the SES is moved, also the landscape can face disturbances and this may be represented with a flatter curve that exemplifies a landscape which does not allow the SES to stay in that regime, thus fostering the transition of the SES into the other cup.

To conclude, the interactions among the components of a SES have resulted crucial to understand and predict the degree of resilience of the SES, thus its eventual shift form one regime to another. Understanding how the elements interact is necessary to predict whether these are strong enough to support and face both internal and external perturbances. In order to define the degree of resilience of a SES it is necessary to first identify the elements characterising the SES and how these interact leading to specific outcomes. For this purpose, the next section concentrates on social-ecological systems; more specifically, on a framework used to categorize the composing elements of a SES.

1.2. Social-ecological systems (SESs)

Land is not only a solid surface nor a productive resource, land can also be an ancestral territory, home of different plant and animal species, as well as humans' source of living. What these designations have in common is the fact they are intrinsically connected with the surrounding environment. Being a productive resource, land is pivotal in global and local markets and crop production; in a rural place such as the Karamoja region in Uganda, land can be home of pastorals, their cattle, as well as the main source of income for an entire community. Potentially, there are actors involved when talking about land, more technically speaking *users* of land who are embedded in what Elinor Ostrom defined as "social-ecological systems"; in other words, social-ecological systems (SESs) are the existing interactions among the environment and

human activities. A useful framework to better understand these interactions was provided by Elinor Ostrom, an American political scientist and economist who won the Nobel Memorial Prize in Economic Sciences for her revolutionary research on the ways that people within a community organize themselves to manage finite common-pool resources (Liberto, 2019). After having provided an overview of how this framework was conceived, this section will consider the updated framework that Ostrom and her collaborators created to explain how SESs are composed and how its constituents interact.

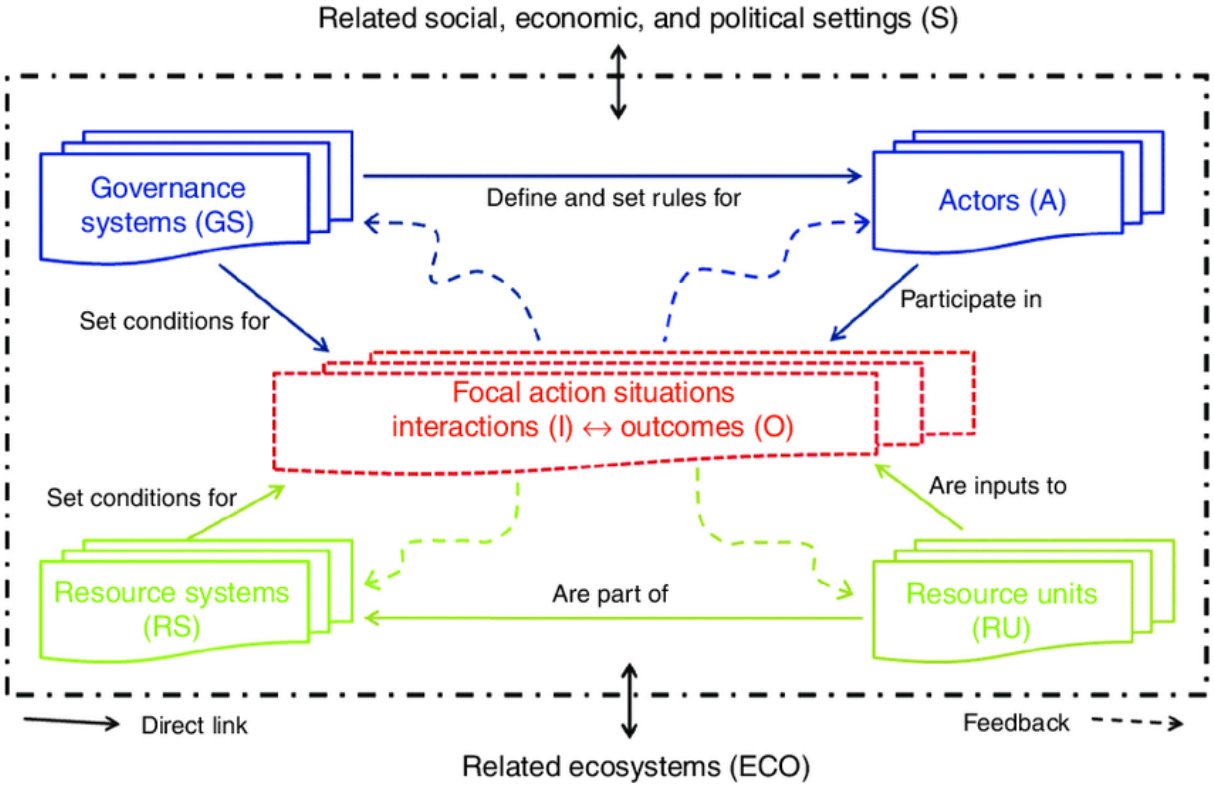
First of all, Ostrom starts from the idea of interconnectedness to organize multidisciplinary knowledge, concepts, and languages to describe SESs, in which all humans and the resources used by them, such as land and water, are embedded. Assuming that, definitions and terms vary from one discipline's language to another, Ostrom's attempt was to create a common framework to enhance communication among scholars from different disciplines. Thanks to the collaboration among scholars, updated concepts and terms have been constantly added and reviewed. As a result, a general framework to analyze SESs' sustainability was created. In her article *A general framework for analyzing sustainability of social-ecological systems*, Ostrom provides a general framework to identify some "subsystem variables that affect the likelihood of self-organization" (Ostrom, 2009). This is confirmed with evidence suggesting that some self-organized communities were embedded in and contributed to a sustainable use of resources leading to more sustainable SESs compared to others, which instead collapsed also due to government policies that managed resources unsustainably. Being the result of a constant work in progress, the original framework proposed by Ostrom in 2009 was revised in 2014. This version has been chosen for this work and will be analyzed below.

Focusing specifically on the latest version of Ostrom's framework for analyzing the sustainability of SESs, the variables composing a SES are explained in this section, together with their function: this is done because, identifying the variables within each SES and their function is useful to detect which are the flaws in the system that can compromise the whole efficiency and sustainability of a SES. The elements or variables composing a SES can interact in different ways and these interactions define the complexity of the system. More technically, Ostrom defined complex SESs those composed of what were initially named "four first-level core subsystems" (Ostrom, 2009). These were named differently in 2014, and the term used was "four highest-tier variables", which will be used from now onwards (McGinnis & Ostrom, 2014). These four highest-tier variables are the following:

- Resource Systems (RS).
- Resource Units (RU).
- Actors (A).
- Governance Systems (GS).

For clarity issues, these highest-tier variables can be explained by providing some examples: first of all, resource systems (RS) may be forested areas, pastures, fisheries and farming land; within each of these RS, there are resource units (RU) such as animal and plant species contained in the forests, cattle in grazing lands, fish in fisheries or fishing ponds, and crops in farming lands. Local communities, namely pastorals, fishermen and farmers, are the potential users and extractors of such RU and their activities may be for sustenance or commercial purposes. However, in the revised framework the term *actor* (A) replaced *users*, this to include not only direct users of resource systems and units, but also third parties such as investors or landowners not directly using the land. All these sub-systems, namely resource systems, units and actors, may be ruled by a *governance system* (GS), such as governmental or nongovernmental organizations, as well as collective-choice rules, all managing SES through the rule implementation, reformation and enforcement. In Figure 2, blue and green boxes denote these four highest-tier variables, which are interconnected among them. Resource systems, units, actors and governance systems interact among themselves and find themselves in a specific circumstance producing an outcome that can affect the SES components as well as related socio-ecological systems. For this reason, three further components or variables are also represented in Figure 2: these are the *social, economic, and political settings* (S), *related ecosystems* (ECO), and *action situations*. In an action situation, *interactions* (I) occur producing specific *outcomes* (O). Outcomes, in turn, enhance feedback mechanisms, which can be positive or negative depending on whether they respectively foster or stabilize the change that a specific action situation can lead to. In Figure 2 dashed arrows denote these feedback mechanisms.

Figure 2 - *Revised social-ecological system (SES) framework with multiple first-tier components*



Note 2. From "Social-ecological system framework: initial changes and continuing challenges", by McGinnis and Ostrom, 2014, Ecology and Society, 19(2): 30, p. 4. Copyright © 2014 by the author(s). (http://dx.doi.org/10.5751/ES-06387-190230).

An example of feedback mechanism may be provided to explain in concrete terms what the dashed arrows represent. In a real-world SES, the intense use of fertilizers in the farming land (RS) can increase the levels of water pollution in the lake nearby, which is another resource system. In this case, the feedback mechanism is a positive one, in the sense that the use of fertilizers is increasing levels of pollution in the related ecosystem (ECO). Fortunately, there are ways to reverse and stabilize such outcomes and this can be done thanks to negative feedback mechanism such as the use of eco-friendly fertilizers or more sophisticated irrigation mechanisms to reduce chemical flows into the lake. In this regard, what is important to highlight is that any component of the SES can influence and be influenced by social, economic, and political settings; for instance, the chemical flow into the lake not only pollutes water, it can also kill fish that are the source of income for fishermen: this, in turn, can have social and economic consequences on the affected people, reducing their source of income or in worse

cases, leaving them with no means to sustain themselves and their families. Politically speaking, some rules on the use of fertilizers or sanctions can be imposed to compensate the loss and damages caused to the fishermen. This is just an example of a possible social, economic and political settings (S) with which the four core-subsystems interact or clash. For completeness, each of the four higher-tier components contain second-tier variables, in turn composed of further deeper variables. For clarity issues, a table has been reported in Figure 3 to shows some updated examples of both first-, second- and third-tier variables.

Figure 3 - *First- and second-tier variables of a SES*

First-tier variable	Second-tier variables
Social, economic, and political settings (S)	S1 – Economic development
	S2 – Demographic trends
	S3 – Political stability
	S4 – Other governance systems
	S5 – Markets
	S6 – Media organizations
	S7 – Technology
Resource systems (RS)	RS1 – Sector (e.g., water, forests, pasture, fish)
	RS2 – Clarity of system boundaries
	RS3 – Size of resource system
	RS4 – Human-constructed facilities
	RS5 – Productivity of system
	RS6 – Equilibrium properties
	RS7 – Predictability of system dynamics
	RS8 – Storage characteristics
	RS9 – Location
Governance systems (GS)	GS1 – Government organizations
	GS2 – Nongovernment organizations
	GS3 – Network structure
	GS4 – Property-rights systems
	GS5 – Operational-choice rules
	GS6 – Collective-choice rules
	GS7 – Constitutional-choice rules
	GS8 – Monitoring and sanctioning rules
Resource units (RU)	RU1 – Resource unit mobility
	RU2 – Growth or replacement rate
	RU3 – Interaction among resource units
	RU4 – Economic value
	RU5 – Number of units
	RU6 – Distinctive characteristics
	RU7 – Spatial and temporal distribution
Actors (A)	A1 – Number of relevant actors
	A2 – Socioeconomic attributes
	A3 – History or past experiences
	A4 – Location
	A5 – Leadership/entrepreneurship
	A6 – Norms (trust-reciprocity)/social capital
	A7 – Knowledge of SES/mental models
	A8 – Importance of resource (dependence)
	A9 – Technologies available
Action situations: Interactions (I) → Outcomes (O)	I1 – Harvesting
	I2 – Information sharing
	I3 – Deliberation processes
	I4 – Conflicts
	I5 – Investment activities
	I6 – Lobbying activities
	I7 – Self-organizing activities
	I8 – Networking activities
	I9 – Monitoring activities
	I10 – Evaluative activities
	O1 – Social performance measures (e.g., efficiency, equity, accountability, sustainability)
	O2 – Ecological performance measures (e.g., overharvested, resilience, biodiversity, sustainability)
	O3 – Externalities to other SESs
Related ecosystems (ECO)	ECO1 – Climate patterns
	ECO2 – Pollution patterns
	ECO3 – Flows into and out of focal SES

Note 3. From "Social-ecological system framework: initial changes and continuing challenges," by M.D. McGinnis and E. Ostrom, 2014, Ecology and Society, 19(2): 30, p. 5. Copyright © 2014 by the author(s). (http://dx.doi.org/10.5751/ES-06387-190230).

Far from being complete, this brief explanation sought to show the complexity of the SES framework. This proves that, analyzing and measuring the variables within each subsystem is a challenging and technical procedure also due to the fact, that a shift of a variable can foster a spillover effect on the others, producing different outcomes, which in turn can lead to further changes in the SES, and so on. This updated framework was elaborated by Ostrom and her collaborators to extend it to "complex SESs in which multiple sets of actors consume diverse resource units extracted from multiple interacting resource systems in the context of overlapping governance systems" (McGinnis & Ostrom, 2014).

As in the case of the 2009 framework, this updated version sought to define why some SESs are sustainable while other collapse. Given the purpose of this work, which is to analyze the degree of resiliency of people and the environmental system in which they live or work in, it is important to focus on socio-ecological systems: this allows the understanding of the interactions among the variable within a SES and whether these lead to sustainable outcomes, that can enforce resilience, or not. In the case unsustainable outcomes result from such interactions, depicting the flaw in the system becomes relatively easier thanks to this framework that simplifies a complex reality. Now that the composing elements of a SES have been clarified, it becomes even clearer what the ball in the ball-and-cup diagram represents: meaning, the SES with all its elements, variables and the interconnections among them. To conclude, Ostrom's general framework has to be kept in mind because it will become useful in defining how every element within a SES is or can be hit by external and internal threats, becoming more vulnerable to further hazards. More specifically, the three cases that will be analysed in chapter three are all stories reporting how external and internal threats connected to the phenomenon of land grabbing have shaken socio-ecological realities. For this purpose, the next section will explain how land grabbing can hit SES' components, thus rendering them more vulnerable and less resilient.

1.3. How land grabbing undermines resilience: the causal link between resilience and land grabbing

The purpose of this work is to define the degree of resilience of specific Ugandan communities and the ecosystems in which they are embedded; what these communities have in common is that each of them has been affected by the same phenomenon: land grabbing. Land grabbing is a further exacerbator of already vulnerable situations, especially when this phenomenon occurs in developing countries, which is often the case. What this section wants to verify is how land grabbing undermines resilience, thus the capacity of communities and the ecosystem to adapt and persist when facing such phenomenon. For this purpose, it becomes necessary to explain the following aspects: firstly, what land grabbing is; secondly, how the degree of resilience of a SES can be undermined by such a phenomenon and, if so, up to which point or threshold: this will be explained throughout an example that sought to clarify with specific terms the causal link between resilience and land grabbing, meaning how the latter is undermined by the former. The impacts of land grabbing on each of the SES's variables are explained throughout the example in order to assemble all the information gathered in this chapter. Finally, a diagram will be created to clarify the causal link between resilience and land grabbing.

Keeping in mind the interconnection between nature and human beings within a SES is central to this work. In fact, the concept of resilience used here is based on the presumption that people, societies and markets are integral parts of the biosphere (Moberg, Simonsen, et al. n.d.). A glaring example of this interaction is the global market demand of land for agricultural or extracting purposes: these activities use resources intensively, exploit both human and natural capital, reshape the landscape of environments previously rich in biodiversity. A phenomenon that perfectly fits this definition is land grabbing. Land grabbing is a term referring to land acquisition in which public or private, foreign or domestic investors, including governments, are involved. Land grabbing is a proper land market in which buyers and sellers are the main drivers of this phenomena. Usually grabbers control, buy or borrow land for resource control and extraction, and do so in different ways: leasing land, stipulating contracts or directly purchasing large portions of land. These are some of the means through which land grabbing occurs. However, buyers and sellers are not the only actors involved in land grabbing; on the contrary, these activities usually occur at the expense of local communities who are living and using the land for their purposes, which can be, small farming activities, fishing areas,

pastoralism among others. Land grabbing activities are proven to have a cross-scale effect on the SES and the surrounding territories and communities, which are in turn part of other SESs. This critical approach towards land grabbing aims at verifying that this phenomenon often leads to "resilience grabbing" (Haller, Käser, Ngutu, 2020). In other words, the target of these activities is land in all its components and layers, namely, the organic layer, the surface soil, the subsoil, the substratum and the ground water; some activities even reach the bedrock to exploit the minerals available. However, the damages are not limited to land and its fertility, but also to the animals and communities living on these pieces of land. It can be said that communities' resilience is undermined by land grabbing because, when people are deprived of their land, they are more vulnerable to both internal and external perturbances. More specifically, internal shocks may be all those dire socio-economic and political conditions already experienced by the community before land grabbing activities started: in this case, land grabbing becomes a further exacerbator that undermines the communities' capacity to face common daily issues. This because, land grabbing is proven to cause and exacerbate conflicts among the local people, who fight over the fewer pieces of land left and the natural resources within them; in addition, several are the disputes reported to occur between grabbers and the locals because, the latter, are deprived of their land and, the former, start their activities without previously informing and waiting for the locals' consent: all this translates in further social and political discontent among the community members. Consequently, these communities become more socially and economically unstable than they were before the arrival of grabbers. Moreover, communities hit by land grabbing become more vulnerable also to external shocks that are not strictly connected to land grabbing: these may be climate change, other economic and political policies to manage resources and so on.

To better explain the causal relation between land grabbing and resilience, an example may be provided. Let's assume that a foreign company buys a piece of land in Uganda for agricultural purposes. More specifically, the aim of the company is to instal vast portions of fields for crop production. Fertilizers are intensively used in agriculture especially nitrogenous fertilizers, "whose excess use results in an emission of nitrogen oxides (NO, N2O, NO2) responsible for severe air pollution" (Prasad, et al., 2019, p. 79). The main scope of the use of fertilizers is to supply nutrients essential to the plant to grow and overcome its nutrient deficiency. Apart from providing the plant with beneficial mineral nutrients, such as phosphorous (P), potassium (K), calcium (Ca), magnesium (Mg) among others, fertilizers are used to improve the yield of the

crop significantly by raising soil fertility. However, fertilizers, pesticides and herbicides do cause damages on the environment: the more intensive the use of the land is, the lower the level of soil nutrients is. This, in the long run, will ruin crop plants which can be ether replenished through natural processes or, what happens more frequently, by adding fertilizers. Overuse of such chemicals is causing serious challenges connected to soil and water pollution, land degradation, increase air pollution through the emissions of greenhouse gasses. It follows from this brief analysis that the capacity of the soil, which is the main resource system (RS) of the SES in question, to produce nutrient crops is reduced over time; not to mention the loss of biodiversity the establishment of such fields can cause: let's assume that, previously to the installation of the fields, the landscape was populated by resource units, such as species of plants, animals, insects and wild grasses sustaining cattle. These have been disturbed or, at the worst, killed by the substances within the fertilizers. It is now clear how the overuse of land, which is often the consequence of land grabbing, drastically reduces the capacity of both plants and animals to adapt and persist; in other words, resilience is undermined.

Now that the consequences of land grabbing activities on the resource system (land) and its resource units (animals and plant species) is clear, the impacts on actors and the governance system may be made explicit; to do so, the consequences on the actors and the impacts on the system of governance are analysed. First of all, in the example made, the main actors are the investors over land and the local communities, who are affected by land grabbing in different ways. Once the soil is not fertile anymore, investors can purchase another piece of land elsewhere, while local communities are certainly the more vulnerable to land grabbing activities given the impacts this had on the cattle and land, which are both vital sources for rural communities. In Uganda a vast portion of people relies on land and its resources, so it becomes clear that the pollution of land, soil and water caused by fertilizers is a threat to the existence and decent living conditions of Ugandans. Unfortunately, since the fields have been installed, entire families have been dispossessed from their ancestral land and left with little or no means to sustain themselves; pastorals and their cattle are struggling to find green grazing areas due to the new crop fields that are standing in their way. Chemicals polluted the groundwater and cattle are drinking the water in the lake near the field: pastorals know the reason why some of their cows are sick, they know the water is not as clean as it was in the past, but that lake is the only source of water due to long periods of drought that have been intensifying in Uganda in recent years. This description was an attempt to explain in concrete terms how land grabbing

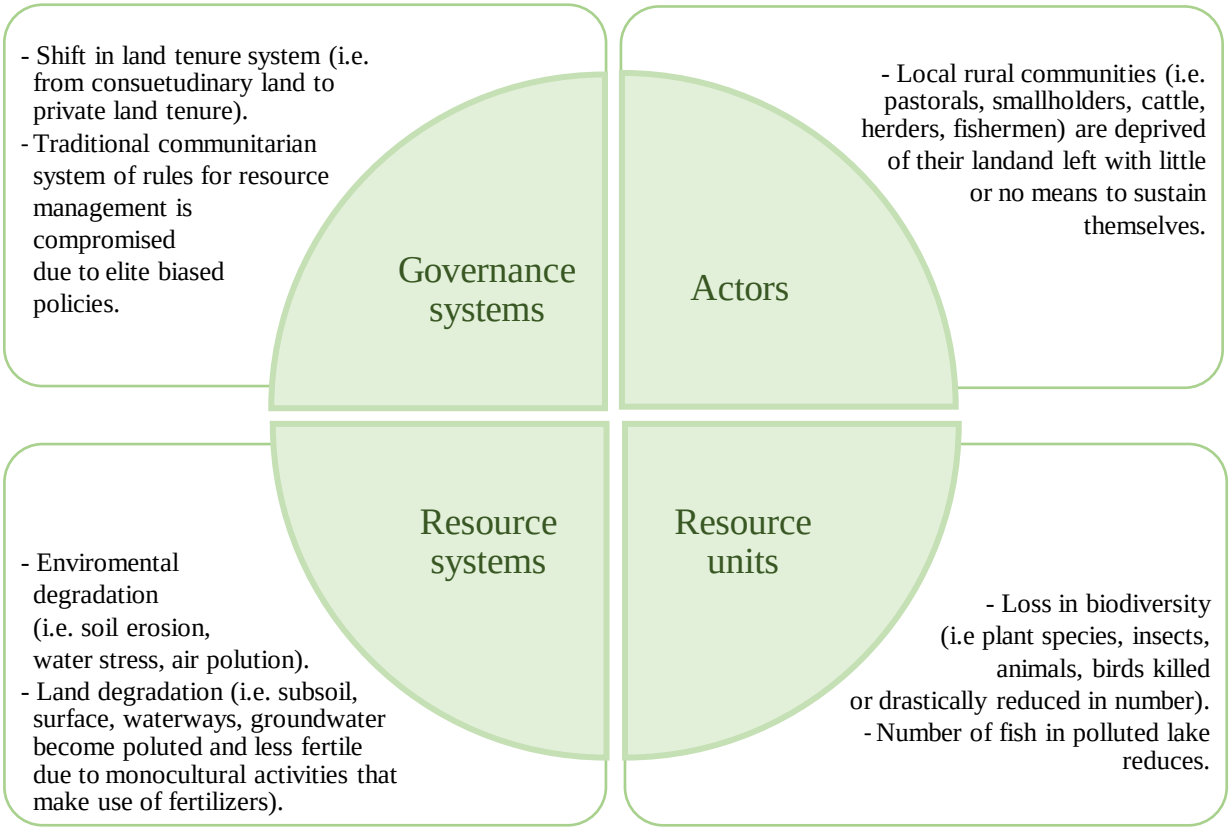
activities undermine the ecosystem capacity to regulate climate, biodiversity, soil fertility, moving the whole SES into a new biological situation to which people and species have to readapt.

Land grabbing has terrible consequences also on the governance systems that rules a SES. As a matter of fact, investors of the agro-industrial business that purchased the piece of land in the example, has certainly more bargaining power than local communities, who often and willingly do not possess any certificate of land ownership. The certificate is the only way to prove that a piece of land is owned by a Ugandan. However, many Ugandan people lack such a certificate providing leeway for the company to buy the piece of land and use fertilizers to make it more productive, at least in the short term. The system governing that piece of land shifted from being a resource system owned by local community members under customary land tenure, to a private piece of land exploited by the company. This shift in the GS due to land grabbing is considered legal. Whether this is legitimate or not is left to the reader's own consciousness. What is more, such shift in land tenure has negative consequences on land and on the living conditions of dispossessed people, who are now forced to move elsewhere and readapt. Their living conditions have been undermined by the intense agricultural activity, whose crops are sold on the international market, thus not reaching the communities.

It has been explained how each of the elements composing the social-ecological system have been somehow affected by land grabbing. In the ball-and-cup diagram, the elements composing the SES would shape the ball; while land grabbing would be the external threat causing the ball to roll and the dimension of the cup to change up to the point that the SES cannot fit anymore in the cup. Changes in the resource system (land), its resource units (plants, animals and insects among others), the actors (local communities) and the land governance system (from customary land tenure to private land) have reduced the capacity of the SES to persist in these new conditions; this in turn, led actors and resource units to readapt and move elsewhere to find a new stability. Land grabbing is therefore a severe shock for the whole SES, which has become more vulnerable not only in facing the consequences of land grabbing but also in dealing with other external shocks that have been hitting the system: a glaring example in this regard is climate change, which has actually led to longer periods of drought in Uganda and further compromised the access to vital resources to both people and animals. It is clear that land grabbing is only contributing to exacerbate the whole situation. To conclude, Figure 4 reports

a graphic that has been created to clarify how land grabbing undermines the resilience of a SES by using the examples provided in this section.

Figure 4 - *How land grabbing undermines resilience*



Note 4. This diagram has been created by taking the four highest-tier variables of Ostrom's framework; some concrete examples have been chosen to clarify the way in which land grabbing can undermine the resilience of each of the four highest-tier variables. Source: own elaboration.

The figure sought to clarify how land grabbing undermines the capacity of the elements within a SES to be resilient when facing internal and external perturbances. Hoping that the causal link is now clear, more details regarding the phenomenon of land grabbing in the world and in Uganda will be provided, together with the elements that allow some communities hit by land grabbing to remain resilient despite being hit by such phenomenon. All this will be topic of the next chapter.

CHAPTER 2

2.1. Defining land grabbing

As in the case of resilience, no definition of land grabbing that fully captures this issue exists. However, it is useful to define in general terms what this phenomenon is, what it entails and what differentiates it from a mere acquisition of land.

First of all, definitions of land grabbing have been provided by several organizations such as OXFAM, Euroafrica, FAO and Eco Ruralis, "a peasant organization in Romania that works both nationally and internationally for peasants' rights, which includes actions against land grabbing" (Baker-Smith & Mikolos Attila, 2016, p.1). In a paper titled "What is land grabbing?", Eco Ruralis attempted to provide a comprehensive definition of what this phenomenon is and entails, by analysing the definition provided by civil societies, governments, corporations and financial institutions; this is useful because, not only it detects different interpretations of the term from various sectors of the society, but it also helps scholars and readers to always remember considering from which source information is spread and which point of view such piece of information reflects. Therefore, the definition Eco Ruralis provided in a review of 2016 is rather comprehensive and it may be reported and analysed here:

> Land grabbing can be defined as being the control (whether through ownership, lease, concession, contracts, quotas, or general power) of larger than locally-typical amounts of land by any person or entity (public or private, foreign or domestic) via any means ('legal' or 'illegal') for purposes of speculation, extraction, resource control or commodification at the expense of peasant farmers, agroecology, land stewardship, food sovereignty and human rights. (p.2)

This definition was developed by merging the analysis of five "criteria": size, people, control, legality and usage. One of the criteria that differentiate land grabbing from land acquisition is the *size* of land involved: in fact, the term land grabbing is usually used to refer to "big" portions of land. However, sizes are always relative to the country in which these activities take place; for this reason, quantitative research such as a data collection has always to be contextualized by firstly, considering the average sizes of most holdings in the country and, secondly, considering larger land holdings as potential results of land grabbing activities. For this reason, the data collected from Land Matrix database, which is reported in the next sections of this chapter, has been filtered by considering land deals from 200 hectares and above; this was done

to include both relatively smaller and larger portions of land that can be involved in land grabbing activities. Far from being relatively context specific, this filter also allows the reader to have a better overview of the scale of this phenomenon worldwide. The second criteria to be clarified when dealing with land grabbing is *people*: people involved in land grabbing activities can be several, from those who grab the land to those whose land is taken away or exploited for specific purposes; individuals, public and private companies, governmental or non-governmental organizations, domestic or foreign governments are all examples of "people" involved in land grabbing or land purchasing activities. The third criterion is *control*: land can be controlled in various ways, it can be leased through long term leases or concessions that are provided by local governments to land tenants or sharecroppers; land can also be directly purchased, and, in this case, specific certificates of ownership usually demonstrate this. However, there are many cases in which such certificates are lacking; this is frequent to occur in developing countries such as Uganda, whose people have right over land granted by the constitution: in fact, the Ugandan constitution refers to consuetudinary or customary land tenure system as one of the legally recognised land tenure systems. Usually, customary tenure refers to the right of indigenous people and local communities more broadly, to land and the natural resources available: this is a right that finds its roots in the traditions of such communities, whose ancestors used to use those portions of land and used to pass it down from generation to generation. Nevertheless, such transmissions of land used to be made and still are made orally in many places but, the Ugandan constitution introduced certificates of ownership in 1998 and where such certificates lack due to uninformed communities these found themselves disposed from their ancestral lands. Local or foreign companies or government can actually buy or lease such land and do this legally, with a certificate attesting land ownership. In this regard it is important to introduce a further criterion: *legality*. Land can be controlled through legal means as in the case of land certificates attesting the land ownership; this means that land grabbing can be actually legal. What provided the term land grabbing with a negative connotation is illegitimacy: more specifically, local or national laws, such as the 1998 Ugandan Land Act that introduced land certificates of ownership, do not always protect local people from being disposed from their ancestral land; actually, they can be evicted precisely for these concessions of certificates. For instance, companies can buy a certificate of ownership trough legal means but the effects on the local people can be devastating. On the one hand, concessions render such activities legal but, on the other hand, human rights are repeatedly violated. The last criterium

worth analysing is *usage*; land can be used for different purposes: agricultural, infrastructure building, mining activities and the extracting sector more broadly. Water grabbing and green grabbing are two further usages of land: the first refers to the control, redistribution of water sources and this occurs through the privatization of "drinking water, hydropower plants and large-scale agriculture": water grabbing is another big issue all around the world and would need more space to be analysed appropriately. However, it is worth mentioning this phenomenon because water grabbing often and willingly goes hand in hand with land grabbing especially when ground water is involved. Green grabs are "appropriations of natural resources for environmental ends": at first glimpse, this may be considered an activity that is done in order not to harm the environment; however, there is evidence suggesting that such green grabbing activities, such as the installation of national reserves and parks, trees plantations for CO2 capture, can sometimes occur at the expense of local people, who are forced to leave their ancestral forests to allow such activities to take place. Having said so, this does not mean that all green grabbing activities are bad or good, what it is important is to be critical when reading events of this kind and treat them with caution.

In general terms, what is clear from the definition provided above and the analysis of the five criteria is that land grabbing differs from land acquisition mainly because the first usually refers to the acquisition of relatively big portions of land, also called large-scale-land acquisitions, whose negative effects are experienced by local people; in addition, even if land grabbing may occur through legal means, it can still be considered illegitimate as far as respect of human rights, customary land rights to mention but a few. All these criteria are important to take into consideration also because, not all hectares purchased or leased are to be strictly connected to land grabbing in the negative connotation of the term. For instance, charity organizations, governmental or non-governmental groups may purchase a piece of land in order to ensure local communities with that piece of land, where they can plant their crops, build their houses and earn a living; this is reported to have happened in the case of the resettlement of the Batwa people after their eviction and a local parish, with the help of a charity organization, the Kellerman Foundation, purchased some land to be used for the resettled Batwas. Again, not all grabbing activities cause damages, actually there are cases in which local communities are involved in such activities and benefit from these: in the Karamoja region of Uganda, for instance, local communities were involved in artisanal-small-scale mining activities for gold collection. Artisanal-small-scale is proven to harm less the environment if compared to large-

scale activities. To sum up, the five criteria can be helpful to differentiate land grabbing from land acquisition.

The next sections will specifically deal with data taken from the Land Matrix database. More specifically, Land Matrix is an independent global land monitoring initiative that was established in 2009 with the aim to "address the lack of robust data on large scale land acquisition" by taking stock of the "global land rush" as well as its socio-economic and environmental impacts that distinguish a mere land acquisition from land grabbing practices (Anseeuw, Eckert, et al., 2021, p. 4). According to Land Matrix analysis, land grabbing activities are characterized by rare compliance with the "principles of responsible business conduct", little or no consultation with the affected communities, "non-consensual and uncompensated loss of land" that often occurs with little socio-economic benefits that may be infrastructure building, employment and so on (Anseeuw, Eckert, et al., 2021, p.4); finally, Land Matrix actually found that land grabbing activities usually have negative consequences for the ecosystem being such activities harmful for natural habitats, rainforests and biodiversity preservation. These are all criteria that Land Matrix considers when they refer to cases of land grabbing. For all these reasons, Land Matrix initiative that not only collects data about the number of deals and the hectares involved in land grabbing activities to demonstrate the magnitude of large-scale land acquisition, but it also filters data by specifying the "nature of the deal", "the investors", the scope, the "intention of investment", the cases of forests concessions and the type of product the portion of land under deal produces or sought to produce (Land Matrix, 2022). All this data is collected in the Land Matrix database crated in 2012; when browsing the platform, it is possible to filter the data by selecting the following filters: data per region, country, deal size, negotiation status, nature of the deal, investor, year of initiation, implementation status, intention of investment, product, scope of the land deal or purchase, and forest concession. This allows to be more specific when searching for the data and understand which are the main drivers of land acquisition, lease or concession, which have resulted to be agricultural production, timber extraction, carbon trading, industry, renewable energy production, conservation, and tourism; however, given the lack of transparency characterizing many cases of land grabbing activities it is not always possible or easy to collect information and this makes it difficult to know exactly who is in control of such vast portions of land and for how long. For all these reasons, the data reported in the next sections, more specifically concerning the data of land deals in the world and per region reflects only partly the exact

number of deals involved in land grabbing activities, including also cases that may be better referred to as cases of land acquisition.

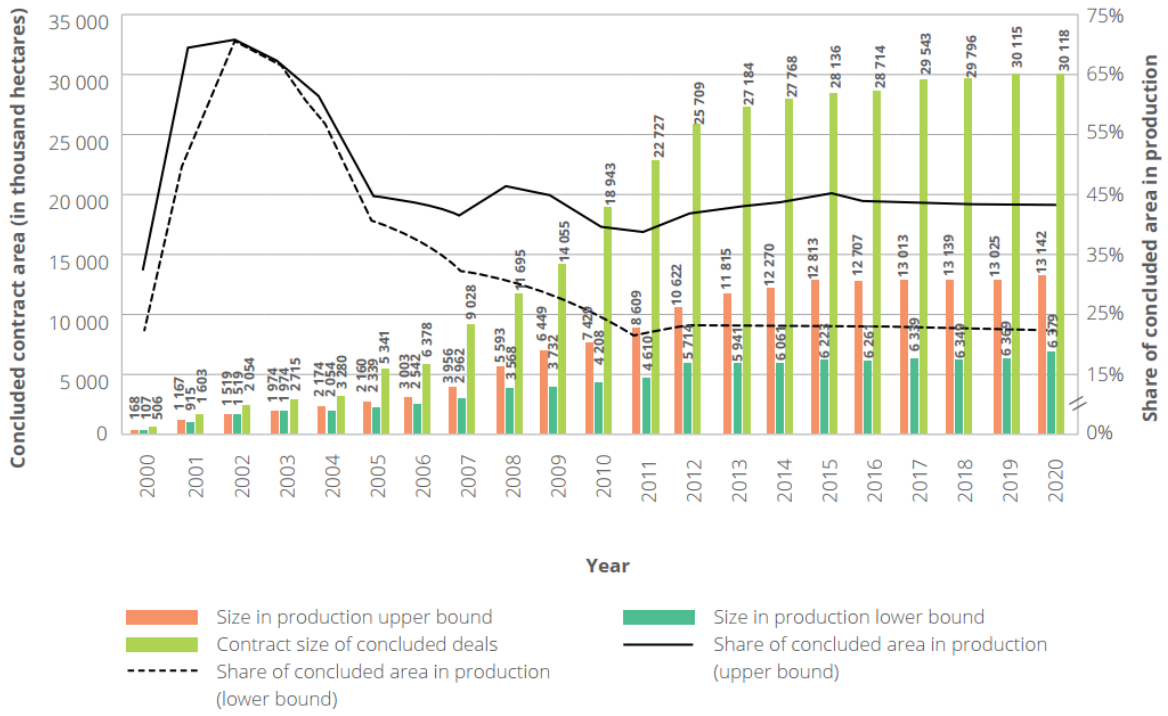
2.2. Land grabbing in the world

Examples of land grabbing are reported to happen all around the globe with investing groups, governments, private industries and corporations taking the land (FoE, 2012). Land grabbing activities usually use resources intensively, exploit both human and natural capital, reshape the landscape of environments previously rich in biodiversity. Knowing the exact number of portions of land involved in land grabbing activities is not an easy task especially when complex investing networks make it difficult to trace the real investor and the exact portion of land. However, over the last decades, research has increased allowing scholars from various disciplines to collect information and data regarding cases of land grabbing. This section is structured as follows: it will first provide some data about the global trend of land grabbing deals over time; then, the purpose and impacts of these activities will be analyzed.

First of all, given the lack of transparency, "weak and deficient governance", and the occurrence of illegal grabbing activities, the exact number of land deals becomes challenging to detect; this is especially true in the cases where countries use tax heavens that hide the real origin of the deal to pay less tax (Land Matrix, 2021). This is a frequent strategy adopted by grabbers. Nevertheless, research in land grabbing spurred especially since 2001 and 2008, when the number of land deals surged. A great contributor in data collection is Land Matrix initiative, which created a data collecting platform about land grabbing activities at the global, regional and national level. Thanks to this platform it is therefore possible to detect the trend in land deals over time and space. Therefore, it becomes important, for the purpose of this work, to report some of the data collected. According to the last assessment report by Land Matrix, a peak of land deals was detected in the aftermath of the commodity price hike of 2007/08, which led investors to participate in a proper land rush at a global scale, to stabilize after 2010. If fact, the graph in Figure 5, reporting the concluded deals over time, shows a slow-down in the trend of land deals from 2013 onwards if compared to the trend from 2008 to 2010. However, since 2012 "between 30% and 73% of the previously contracted land has been put into production" (Land Matrix, 2021, p. 7); in fact, this trend can be seen in Figure 5 by observing how the orange and dark green bars, which are showing respectively the size in production of the upper

and lower bound, gradually increased reaching the higher numbers of productive land from 2012 onwards. The slowdown in further land deals, which is tracked by the black lines in the graph, appears to be a consequence of an expectation of a price moderation and a change in policies regarding land tenure systems following the year 2013; for this reason, it is recommended that land policies are reformed for a sustainable use of land from both an environmental and social perspective: this means guaranteeing the respect of human rights, thus protecting the communities and ecosystems from unpredictable future challenges.

Figure 5 - *Cumulative global contract size of concluded deals over time and size under production (left axis) and shared of concluded size under production (right axis)*



Note 5. Calculations based on Land Matrix data. The lines show the upper and lower bound of the share of contract size (excl. failed deals) in production. The bars show the absolute size per negotiation status per year. Note that in addition to the accumulative size in production by 2020 there is an additional size in production without year information between 1.6 (lower bound) and 8.2 upper bound) million hectares. From "Taking stock of global land rush," by W. Anseeuw, S. Eckert, et al., 2021, Analytical Report III, 1-12. Copyright 2021 by © CDE/CIRAD/GIGA/University of Pretoria. (https://doi.org/10.48350/156861).

The graph does not show the trend of the deals in land of the last two years; nevertheless, according to the authors of the last assessment report of Land Matrix, a new wave of land deals

"driven by the post-COVID economic recovery" is not excludable (Anseeuw, Eckert, et al., 2021, p. 5). Especially from the moment that countries, such as Indonesia and India, have already liberalized their land markets to attract foreign investments from the beginning of the pandemic.

The focus will now move to the purposes of land grabbing and the socio-ecological impacts. Timber, crop and renewable energy production, mining activities, infrastructure buildings such as industries and dwellings, the establishment of national parks for tourism and natural conservation: these are the most frequent uses of land, thus the main reasons for grabbers to invest or purchase portions of land. In recent years, an increasing trend to be added to the list is carbon trading, which is also called green grabbing: a policy instrument adopted by governments and industries to limit carbon emissions; more specifically, this often translates in the purchase of portions of land in developing countries, where trees are planted to capture CO_2 so the overall emission of the country or industry promoting this activity, can be balanced. On the one hand this could be considered a smart strategy but not all that glitters is gold: there is evidence suggesting that carbon trading, which many refer to as greening activity, can lead to negative social impacts since trees are often planted where local pastoralists and indigenous people have their homes. This leads to the analysis of other impacts of land grabbing. This phenomenon usually leads to social and environmental issues. Land acquisition usually means occupying portions of land where local communities such as farmers and pastoralists live; local people affected by land grabbing activities often live in already vulnerable socio-economic conditions, exacerbated by weak provision of land tenure rights: these conditions provide leeway for investors and governments to deal at the expense of local people. In fact, the frequent outcome is that local communities are evicted from their lands and left with little or no means to sustain themselves. According to Land Matrix data, "in at least 18% of concluded deals, the land (or part of the land) was previously or is currently used for smallholder agriculture, pastoralism, or shifting cultivation" (Anseeuw, Eckert, et al., 2021, p. 7). Giving the vast portions of land under deal, the number of people affected becomes huge; this amount is expected to grow hand in hand with the increasing number of deals. From an environmental perspective, large-scale land acquisitions usually result in land exploitation. When land grabbing occurs for the establishment of agricultural activities, these usually include monoculture and use of fertilizers that destroy biodiversity and deplete the soil; mining activities often entail use of chemicals and invasive extractive procedures that erode soil and

subsoil, not to mention the use of fresh water which is already scarce in many developing countries. Despite carbon trading activities being on the rise, land grabbing is a key contributor to deforestation, which in turn leads to habitat destruction and high carbon emissions; a widely known example in this regard is the case of tropical rainforests in Brazil and Indonesia. However, new deforestation threats in the Congo Basin and West Africa have been increasing to date (Land Matrix, 2021). Considering all, not only land is usurped and exploited with terrible social and environmental consequences, but also entire ecosystems are at risk, if not destroyed. Despite all these motivations which are enough to prove the damages land grabbing does, investors continue to grab and governments allow such activities to occur in their own or foreign country.

2.2.1. *Land deals per region*

Land grabbing certainly is a global issue and global dynamics directly or indirectly contribute to the spreading of this phenomenon. However, it may be interesting to see which are the most affected areas in the globe, which will be referred to as *grabbed areas*. What is widely acknowledged by scholars and proved by the data analysis reported by FOCSIV in their last report is that land grabbing occurs in some regions more than in others; FOCSIV, considered the biggest Italian Federation of Christian NGOs and Volunteer sending organizations, reported that the main grabbed areas in 2020 were in Latin America, Africa, Eastern Europe, followed by Asia and Oceania. More specifically, in 2020 the number of concluded land deals in these regions was a total of 2.384 covering a surface of 93,2 million hectares, an amount that could cover Germany and France put together (Federazione Organismi Cristiani Servizio Internazionale Volontario [FOCSIV], 2020).

However, to provide more recent data, a further analysis was conducted for this work: what resulted is that in two years' time, from 2020, when FOCSIV reported the updated data, to 2022, Eastern Europe became the first grabbed area in the globe. By observing the Land Matrix platform, it can be seen that Ukraine has the highest number of hectares of land under deal compared to the other Eastern European countries reported in the database: these are Romania, Poland, Hungary, Serbia, Macedonia, Bulgaria, Belarus and Lithuania. What is also important to mention is that from 2001 up to 2020 a temporary moratorium on the transfer of agricultural land was established in Ukraine but, in 2020, the Ukrainian Parliament passed a law according to which only Ukrainians could purchase or sell land, as well as companies with legal base in

Ukraine, the state and local authorities. In addition to this, FOCSIV reports that Ukraine has the largest volume of agricultural land in the European continent and the fact that now Ukrainian landowners are free to sell land may be one of the reasons behind the raising hectares of land in the country. Generally speaking, there are two other factors that may explain the growing number of land deals in Eastern Europe: firstly, Eastern Europe is a region where land is generally fertile also due to the little exploitation these lands have been facing along the decades. The second aspect, which may be even more relevant to explain the recent increase of hectares under deal in Easter Europe, is the fact that many eastern Europe regions have the cheapest arable land compared to other European countries. In this regard, the data collected by Eurostat shows that Bulgaria, Hungary, Latvia, Lithuania, Estonia, Croatia and Romania are among the countries with the lowest average price of one hectare of arable land (Eurostat, 2021); according to World Bank data, some of these countries have average price of agricultural land which is even lower than that of many other countries in the African continent and Latin America (The Global Economy, 2018). It can be seen from Table 1 that Eastern Europe is followed by Africa, Latin America and Asia. This table shows the results based on Land Matrix data, which was collected by inserting specific filters considered to be more in line with the results of the world land grabbing trend previously analyzed. The filters were set following this reasoning: given the fact that between 30% and 73% of the contracted deals made before 2012 have been put into production since that year, the period selected in the filters' database was from 2012 to 2022 considering concluded deals only. More specifically, the data was divided per region showing the hectares of land under concluded deals as well as the number of deal locations. Concluded deals refer to deals in their start-up phase, thus not productive, as well as those in operation, thus productive; for this reason, Table 1 also specifies the operational phase of these concluded deals. All these filters were set with the purpose to focus only on those ongoing activities after 2012. Both activities in their start-up and productive phase have been included; this because, whether these activities are already producing resources or not, these have an impact on local socio-ecological systems.

Table 1 - *Concluded deals per region from 2012 to 2022*

Region	*Total number of deal locations*	*Start-up phase*	*In operation*	*Hectares under concluded deal*
Eastern Europe	719	16	703	22 533 043,5 ha

Africa	497	94	403	13 306 801,39 ha
Latin America	280	61	219	11 852 396,02 ha
Asia	296	66	230	5 316 419,52 ha
Total	**1792**	**237**	**1555**	**53 008 660.43 ha**

Note 6. Data collected from Land Matrix Platform on March 7th, 2022. (https://landmatrix.org/map).

Table 1 actually demonstrates that land grabbing is a phenomenon that occurs everywhere in the world, both in the southern and western hemisphere. However, people who live in already vulnerable situations, meaning that they face poverty, malnutrition, human rights abuses and climate disasters, are consequently more exposed to the negative consequences that land grabbing usually leads to: in fact, among the plethora of reported cases of land grabbing, there are many stories of rural local communities and indigenous people who often and willingly do not have a strong bargaining power and for this reason they are more exposed to land dispossession for grabbing activities. Evidence of this is the FOCSIV report of 2020 sustaining that the targets of the main land investors are local communities of peasants, small landowners, and indigenous people in countries such as Peru, the Russian Federation, the Democratic Republic of Congo, Brazil, Indonesia, Liberia, which are all countries with a colonial historical background and a relatively high internal inequality gap. What is meant for internal inequality gap is the uneven spread of wealth among the population, meaning that the majority of the country's wealth is in the hands of few rich people, while the majority of the population only earns a little percentage of the country's estate. There is a statistical measure to define such inequality: the GINI coefficient. The GINI coefficient is a statistical measure useful to define the economic inequality in a population, the dispersion of income or distribution of wealth among the members of the population. The GINI index is not an absolute measure of the income or wealth of a country, neither it captures the multidimensional characteristics of inequality; nevertheless, it remains useful to have an overall idea of a country's economic situation (CFI, 2021). The coefficient takes values from 0 to 1 or 0% to 100%; the higher the number is, the higher the inequality level: meaning that little portion of the population detains the majority of

the economic income in a population. According to the Corporate Financial Institute[2], the GINI coefficient usually ranges from 24% to 63% (CFI, 2021). In Table 2 the GINI coefficient of a few target countries reported in the FOCSIV report.

Table 2 - *GINI coefficient per country*

Country	*GINI coefficient (%)*
Peru	41.32
The Russian Federation[a]	35.3
The Democratic Republic of Congo	49.4
Brazil	53.14
Indonesia	38.33
Liberia[b]	35.3
Mozambique	53.87

Note 7. Data concerning Liberia and the Russian Federation was taken from the World Bank Group, 2022. (https://data.worldbank.org/indicator/SI.POV.GINI?locations=LR). The other data is taken from Statista, 2021. (https://www.statista.com/forecasts/1171540/gini-index-by-country). All data was retrieved on March 7th, 2022.

[a]The most recent data collected by World Bank database concerning the GINI coefficient of the Russian Federation is of 2018. [b]The most recent data collected by World Bank database concerning the GINI coefficient of Liberia is of 2016.

Table 2 wants to further demonstrate FOCSIV findings concerning the tight bond between land grabbing and inequality. In fact, FOCSIV report of 2021 confirms that the main investors over land remain from the northern hemisphere (China, US, Great Britain, Canada, Belgium), while target countries are usually places which are rich in minerals and natural resources but week governances and a great part of their population owning a small amount of money, while the richest detaining the majority of the country's wealth. This is actually what is mean with the internal gap quantified through the GINI coefficient. Finally, to better understand the data provided in Table 4, it is important to highlight that land grabbing is part of an extractive sector intrinsically connected to inequality, climate change and loss of biodiversity, consequently leading to food insecurity, spreading diseases and raising poverty, especially among those people who rely on land and agriculture for a living. This is actually the case of many local

[2] The Corporate Finance Institute (CFI) is an online training platform for finance and investment professionals in which data analysis and evaluation are collected.

communities living in the seven countries reported in Table 4. Land Inequality Initiative published an interesting report in which the authors depicted the access to land as one of the main roots of inequality (Anseeuw & Baldinelli, 2020). Given the multidimensionality of inequality, from socio-political, to gender inequality to mention just a few, it is clear the plethora of issues that land grabbing exacerbates or, in worst cases, fosters.

The numbers reported in this section are the proof that inequality is widely spread, both in the southern and northern hemisphere and this is especially true when considering land acquisition and distribution. Another proof of the widely spread inequality is the never-ending story about the gap between developed and developing countries, which in the last decades has also been considered with specific regard to climate change. In fact, environmental disasters are reported to happen especially in regions of the southern hemisphere. An interesting analysis provided in the 2021 FOCSIV report is the connection between land grabbing and climate change, showing that not only land grabbing, with its use of pollutants leading to soil erosion, leads to climate change, but also the opposite: according to the report, climate change also fosters land grabbing. In this regard, based on data from the International Panel on Climate Change (IPCC), FOCSIV's report provides an interesting insight sustaining that the energy, food and industrial sectors not only are considered among the main sources of induced climate change, but are also the principal reason for multinational companies to grab (FOCSIV, 2021). To be more clear, long drought periods and heavy rains are undermining agricultural productivity, thus raising the cost of agricultural products; because of this, investors are inclined to invest in land undergoing also grabbing activities. Despite the mainstream and research depicting land grabbing activities to harm the environment, the reasoning by FOCSIV raises awareness regarding the causal link between climate change and land grabbing, meaning that the first can lead to the latter and not only the opposite.

2.3. Institutional resilience framework: a theoretical approach for the analysis of the study cases

In the first chapter the impacts of land grabbing on the constituents of a SES have been explained throughout a concrete example. However, every land grabbing activity has different impacts on the community and, at the same time, each community has a different socio-political and historical background, as well as specific necessities, that shape the capacity of these communities to adapt, persist or transform in the face of the changes caused by land grabbing. This means that, a general framework, such as the one used to explain social-ecological systems, is definitely useful to organize information. However, it is also necessary to consider each case of land grabbing within the context in which this occurs. In fact, a holistic approach that considers social, cultural, political, economic and historical contexts, is preliminary to every analysis of a study case. For this purpose, this work will consider these aspects also following Ostrom's institutional resilience framework: when talking about institutional resilience, Ostrom wanted to analyse the degree of resilience by considering the specificities of a local or regional context. This means that social norms, networks and values, together with the historical background of a community, contribute to the stability or instability of a SES, thus the degree of resilience of a community. By considering all these attributes, institutional resilience is a theoretical approach that examines SESs, and provides the tools to define the requirements for a sustainable SES.

The reason why this theoretical approach has been chosen is because it takes into consideration nearly every aspect intrinsically connected to the communities. Analysing cases of land grabbing through this perspective allows recommendations and suggestions to be context-specific, thus more appropriate to that circumstance. In addition, being the institutional resilience framework based on a holistic approach to the analysis of study cases, it may be the most suitable way of analysing a topic such as land grabbing in Uganda; as already mentioned, land is far from being only an asset, especially for Ugandan communities who consider land not only as a livelihood but also as an integral part of their traditions. Usually handed down from generation to generation, land brings cultural and social identity to the community members; for this reason, when people are deprived of this "asset" they lose their identity too. Finally, another reason why institutional resilience has been chosen is that this framework is based on the same holistic approach used in the SES framework, which shows the possible economic, political and cultural interactions among and within all the constituents of a system.

To conclude, aware of the fact that understanding both cultural and institutional arrangements is essential to define the level of resilience of a SES, the institutional resilience framework applied to the study of resilient communities will be used throughout this work. Through her institutional approach, which incorporates the concept of resilience in both "comparative economic systems and institutional analysis" (Aligica & Tarko, 2014, p.54), Ostrom sought to identify the sources of both resilience and vulnerability when dealing with specific contexts, aware of the fact that each SES presents a unique reality which can only be understood if dealt as such. Given the purpose of this work, that is to analyse the degree of resilience of both the social and ecological systems of three study cases, this theoretical approach will be basis in the analysis of the cases, as well as in the analysis of the elements that define a resilient system, which are provided in the following section.

2.4. What makes a system resilient?

Having provided the theoretical approach that aims at defining those institutional arrangements and social norms contributing to the stability or instability of a SES, some general elements and characteristics enabling a SES to become or be considered resilient may be analysed. Drawing upon the *Sixth Assessment Report (AR6)* of IPCC elaborated by Working Group II (WGII), this work will refer to such characteristics as *enabling resilience conditions*. In the AR6, WGII defines "enabling conditions" all those activities and conditions which "are key for implementing, accelerating and sustaining adaptation in human systems and ecosystems" (2022, p. 29). The working group also provides some examples of enabling conditions, which are similar to the "design principles" for long-enduring institutions listed by Ostrom; as a matter of fact, these "enabling resilience conditions" focus on political commitments, institutional frameworks, access to adequate resources, as well as monitoring and evaluation, and inclusive governance processes. In the IPCC report, working group II focused on global and regional trends concerning the higher degree of vulnerability due to climate change; what is highlighted in this report is the tight bound between society and the ecosystem, meaning that a resilient society and ecosystem can limit their vulnerability and thus be less exposed to climate change. The most exposed regions, also named as "global hotspots of high human vulnerability", are particularly those in West-, Central- and East Africa together with "South Asia, Central and South America, Small Island Developing States and the Arctic" (WGII, 2022, p.12). This means

that in these regions capacity to adapt must be strengthened to reduce their exposure to climate change, which is scientifically proven to have risen all over the globe in the last decades. What has been found is that "climate-associated risks to natural and human systems depend more strongly on changes in their vulnerability and exposure" (WGII, 2022, p. 13); this means that a transformation entailing a transition from a weak and more vulnerable SES to a more resilient and stronger one is needed. For this reason, some conditions that enable a SES to be resilient are reported and analysed below. The following list aims at providing useful tools in the comparative analysis of the three cases dealt in this work, aware of the fact that no universal remedy can be provided to all economic, political, and institutional setting around the globe. Additionally, the following conditions are not in a hierarchical order, rather they may be considered within the same holistic approach through which SESs are conceived.

2.4.1. Collective action and cooperation in a SES

The link between human action and the use of resources is central to SES analysis. In fact, in a real-world SES a plethora of different actors use the same resource systems (RS) and the resource units (RU) within it: the result is a rather complex SES. At this point, two questions may be raised: why do people cooperate? And how such a SES can resist without its actors fighting for the same resources leading to a conflictual outcome? To answer the first question, evolutionary theory may be useful since it explains that strategic interactions and cooperative action are part of the evolutionary process, which occurred mostly during the long Pleistocene era that lasted for about 3 million years, up to about 11,700 years ago (Pester & Zimmermann, 2022). This suggests that human beings inherit strategies, adapt them to the circumstance and solve collective action problems. Evolutionary theory is confirmed by solid empirical evidence from everyday life experiences in which many people cooperate, act together for common purposes but also enter voluntary associations. To answer the second question, Ostrom and many other scholars highlighted the centrality and efficiency of collective action and cooperation when same resources are of joint interest, as it occurs in the case of common-pool resources such as forests, fisheries, irrigation systems, pasture lands among others. To avoid a clash, also known as "tragedy of the commons", it is important to identify who are the actors involved, the degree up to which they benefit from a RU, and the links among actors; in other words, clearly and well-defined boundaries are needed to both cooperate effectively and avoid conflictual outcomes (Anderies, Janssen, Ostrom, 2004). To provide some empirical evidence that avoiding tragedy of the commons is possible, Ostrom used the evolutionary theory: this

theory suggests that some individuals "have an initial propensity to follow a norm of reciprocity and to be willing to restrict their own use of a common pool resource so long as almost everyone reciprocates" (Ostrom, 2000, p.149): this is a sustainable and natural way of defining boundaries among users of resources through the actors' determination of membership. This natural propensity of humans to self-organize for collective action appears to be efficient when a small number of actors are involved, but when common-pool-resources are larger and the actors involved are from different levels of society, the SES becomes even more complex and cooperation is more likely to face obstacles; it follows that, not always self-defining boundaries on a small-scale is enough for organizing activities that are nested in a larger social network of actors. Nevertheless, small-scale organization remains pivotal and shall be basis for further and stronger cooperation at different levels. For this reason, governments and social institutions should focus on building strategic interactions among all actors, and not only between the government and local or foreign elites; it is only by involving all or at least the majority of the community members that a resilient SES can be built. Moreover, the recognition of the right to organize has to be granted by the government to make sure collective action and cooperation at the small-scale level occur in a legitimate way; by doing so, local self-organization can be maintained, legitimized and improved and thereby the level of trust among the actors at different levels of the society can foster; in fact, mutual trust is a pivotal element for efficient collective action (Ostrom, 2000).

All things considered, when a community acts together to achieve a beneficial outcome (O) they build a stronger social network which renders the whole SES more capable of resisting to sudden, unexpected shocks, whether they are external or internal to the system; when facing sudden changes, the more a community cooperates the higher is, what scholars refer to as, the 'absorption capacity' of and 'the speed of recovery' from the given shock (Holling et al., 1995, Walker et al., 2004, as cited in Aligica & Tarko, 2014, p. 56). In other words, the capacity to adapt, persist and possibly to transform, are higher when collective action and cooperation occur, leading to beneficial outcomes at the different levels of the society. As already mentioned with the institutional resilience framework proposed by Ostrom, it is essential to understand the context in which collective action occurs or can occur. For instance, someone may argue that shaping strategic interactions is not a viable option in countries already experiencing a dire situation. However, empirical evidence throughout history suggest that it is in times of crisis, when people have been negatively affected by disasters, that building social connectedness

appears a viable option. In addition, in developing countries the sense of community and mutual aid tends to be stronger. To conclude, strategic interactions are not an overnight process, they need time and the will of all actors; collective action and strategic interactions are deeply embedded in human behaviour and for this reason shall be considered a fundamental element in resilience SES.

2.4.2. *Clear system of rules*

As already mentioned, when many actors are involved, identifying strategic interactions is fundamental; nevertheless, without a common guideline defining the roles among actors, determining strategic interactions for an effective collective action may be tough if not impossible. In a complex SES, farmers and pastorals are not the only actors involved and for this reason a shift from users to actors was suggested by scholars; private foreign investors and the government are just few examples of other actors involved. For this reason, it is recommended that a well-defined system of rules is set, not only for identifying who does what but also who does what with what and at which costs and benefits. Rules provide "shared normative understandings about what a participant in a position must, must not, or may do in a particular action situation" (Ostrom & Hess, 2007, as cited in Aligica & Tarko, 2014, p. 50). Additionally, rules are at the base of our societies and institutions and knowing the mechanisms by which societies change and shape their rules is of utmost importance for identifying the degree of resilience of a social system as well as the ecological one. A well ruled society is also more likely to lead to a more sustainable and controlled use of resources. However, a rule to be fair and equitable requires that "everyone within a state is subject to the same law" (Fair Trials International, 2022) but this requirement appears not to be always respected, especially in developing countries where the system or rules is often and willingly violated both at the top and bottom level. To overcome such issues and create a resilient system, it is necessary to shift from a top-down approach, in which rules are provided by the government and communities are passive receivers, to a polycentric one, in which different actors are involved. At first sight, this may appear as a too radical and disorganized approach, but empirical evidence proves the efficiency of polycentric systems not only in local realities, such as the cases analysed later in this work, but also in metropolitan areas: Ostrom in fact reports examples of the benefits a polycentric system can lead to in "state-level projects in the United States" (Ostrom, 2010, p.553). According to this view, the rule-making-process shall include the local community, the government and mediators, which could come from institutions such as NGOs and other

associations. An inclusive rule-making process can be beneficial to all actors: firstly, an inclusive rule-making process will make the local community feel more involved, protected, less vulnerable, therefore, more willing to *cooperate* in times of crisis. Secondly, by involving different levels of the society, it is more likely that the government acts in congruence with social norms and values and so appear more reliable in the eyes of the community. When a government reaches such position, its legitimacy is higher and the whole social system is stronger, coherent and more resilient. Thirdly, the mediators ideally possess the knowledge to understand technical terms regarding law. If managed well, this will allow direct and clear information to the community who not always possesses the technical knowledge to understand laws in depth or does not even know the administrative procedures, contracts, and legislations in force; in rural areas this lack of information and technical knowledge is widely spread and for this reason mediators may be further recommended. The presence of mediators is not to be underestimated: apart from being composed by people who are expertise in specific fields, in this case law, mediators also possess an advantage that the government does not always have: the trust by its community. Developing countries often experienced historical moments that mined the trust between the government and its citizens and for this reason, the presence of mediators appears useful to build knowledge and trust among the community members and the government. If this process is managed successfully, the outcome is a virtuous cycle: a polycentric rule-making process will result in a more equitable system of rules that involves the higher number of actors; this will foster trust, participation, and further *collective action*; in turn, this will lead to a more efficient system of rulemaking and rule informing. When social norms are defined and widely accepted, a SES is certainly more resilient.

2.4.3. Efficient Monitoring mechanism

In many places where land grabbing activities occur, there is an already established system of rules defining rights and duties; what lacks in these situations is a systematic and equitable monitoring mechanism auditing rule compliance and non-compliance. Evolutionary theories and behavioral studies showed that human brains differ in the way they reason about what is forbidden, compulsory or permitted (Ostrom, 2000): such reasoning can be applied to social norms and rules, meaning that individuals comply or not with established rules depending on the way they value social norms. In addition to this, a cultural component shall not be forgotten: every culture has its own secular values; for this reason, some norms that in a culture are inviolable, can be of minor importance for some communities and so less respected. Following

these reasonings, polycentricity can be useful to reduce non-compliance since the majority of local actors are involved in decision-making preventing eventual non compliers to disagree. If this is not enough punishment for non-compliers may be added as a monitoring mechanism of rule compliance. This, linked to a polycentric rule-making procedure will make sure that rules are equitably set, as proved in the previous section, spread and implemented: this three-step process is a core understanding of the rise, evolution and persistence of social rules within a SES. Monitoring a system efficiently also means detecting errors and finding solutions: basically, it is a learning-by-doing process that promotes adaptation, innovative thinking, thus transformation when needed. It follows from this reasoning that also the use of resource units is to be controlled and monitored, this is true especially from moment that a SES is to be considered resilient only if both social and ecological systems are ruled. Therefore, polycentricity becomes pivotal also in monitoring a SES since it allows actors, who possess a better knowledge of the resources, to report the most efficient and practical way to manage resources; it is quite intuitive that the most suitable actors in this regard are local people such as farmers, pastorals and fishermen, who work with resources daily and for this reason they appear to have a better knowledge given from their direct experience on the ground. Being the nearest to resources, these actors are able to see if rule implementation not only occurs but also works in that specific situation; if this does not happen, thanks to the polycentric structure that sees farmers involved in organizations, farmers or stakeholders can report what is not appropriate for the context. Synergy among government, NGOs and stakeholders is to avoid corrupted people, both from the "top" and the "bottom", from non-compliance with the assigned role: for instance, stakeholders may be more likely to voluntary or involuntary misreport information when rule incompliance is done by acquaintances. For this reason, more objective actors, such as NGOs and working associations. are needed for a monitoring mechanism to function. Reaching total partiality and objectiveness is rather complicated but a polycentric monitoring process showed efficient in several cases. At this point, one may argue that by adopting a polycentric system, the government is left aside but this view does not consider other aspects: in fact, the government can fully benefit from such polycentricity considering that it can better monitor local realities through the establishment of monitoring groups working at different levels or the society. In addition, for a polycentric monitoring process to be complete and not anarchic, the government's provision of legitimacy is of utmost importance. Having said so, the government can and shall make treasure of such a polycentric system since it can

benefit from it. Polycentricity also enhances face-to-face communication between parties which is proved to be beneficial both in the rulemaking and monitoring rule-implementation procedure: as a matter of fact, face-to face-communication facilitates detection of non-compliers and free-riders and it also sets in motion a process of cooperative behaviour that, together with a sanctioning mechanism through which participation is beneficial, encourages participation.

2.4.4. Polycentricity

In the previous paragraphs the functional role of polycentricity in resilient SESs has been highlighted. Even though each of the elements fostering resilience are intertwined and creating a schematic framework can be misleading, polycentricity may be set as a separate feature; this will be useful to define the general degree of polycentricity in the three study cases and therefore convey with the purpose of the work. Ostrom (2010) defined polycentricity as a system where citizens are able to organize not just one but multiple governing authorities at different scales. As a matter of fact, in the second enabling resilience condition, polycentricity is seen in the context of rule-making and rule-informing procedures and it appears functional for the evolution of rules and for the adaptability of a system. In rule making processes, polycentricity becomes synonym of flexibility: for a system to persist, adapt and transform, rules must be "flexible enough that they can cope with uncertainty and unexpected challenges, but fixed enough that they set up a credible institutional environment that people can trust" (Aligica & Tarko, 2014, p. 69). In addition, it is important that rules are well understood and, for this to be possible, they have to be relatively easy to understand. This simplifies rule-informing procedures that to be considered functional and efficient, not only rules have to reach the majority of actors involved but they also have to be widely understood; often and willingly, rural people, such as pastoralists, indigenous groups, small-holders and farmers, are misinformed either because they lack of sufficient technical knowledge to understand existing complex rules or because they do not receive the right or complete information from the government or, when information is provided from the government, people are skeptical or do not trust the government. As already mentioned, mediators are important parts in a polycentric system to shape and explain comprehensive rules and a practical way to do so already exists: for instance, in many rural areas around the world, there are groups of landowners involved in associations, NGOs or working groups who are both landowners and mediators; in these associations these people talk, consult one with the other and make rule-proposals to the

government; when accepted, some local participants of the association are chosen to go to local villages and inform people about the rules and rights. Landowners or farmers involved in the rule making and informing process have the advantage of knowing and using local knowledge as well as seeing first-hand everyday issues that are not always tackled at the governmental level. Finally, this net of actors across different levels involves a higher numen of actors, thus reducing the number of non-compliers; when this is not enough, detecting non-compliers is definitely easier when there is an efficient polycentric system in which actors are well-informed about their rights and duties.

Polycentricity is useful in the management of ecological systems: when actors at different scales interact, controlling that resources are used in a sustainable manner becomes easier. As WGII reported in the last *IPCC Summary for Policy Makers*, "governance for climate resilient development is most effective when supported by formal and informal institutions and practices that are well-aligned across scales, sectors, policy domains and timeframes" (p.33). Partnerships with local communities must not be omitted, given the great contribution they can potentially give if included in a SES management. More specifically, local people have the advantage of knowing exactly wat is happening on the ground at a daily basis. This crucial information can only be complete if interlevel consultation occurs; this may occur thanks to mediators, ensuring dialogue, or an inclusive governance system more generally (WGII, 2022). Polycentricity is based on a joint action among actors and is therefore effective in the management of both social and ecological issues, as well as in developing more enduring adaptation outcomes.

2.4.5. Informed society

Since the problem of climate change and the damages this is causing to both the earth and living beings have become widely acknowledged, governments, international and non-governmental organizations, stakeholders and the civil society, among others, began to negotiate and promote actions and projects to fight climate change. What is implicit in all this is that information connected to climate change has spurred: researchers and scholars contributed to the collection and spread of information; platforms and academic articles about climate change are now within everyone's reach. Information has translated into proper movements and projects, such as recycling centers, organic farming practices to reduce pollution, conserve water, reduce soil erosion and waste. The list could go on, but the focal point of this introduction to the fifth

enabling resilience condition, is that being informed about the issues the earth and social-ecological systems can face is fundamental to spur innovative thinking, thus find solutions. Knowing how a system functions and how to make it function can build a stronger and more resilient SES. In order to achieve this, well-informed individuals about the rules, roles, rights, duties and use of resources, are needed also at the local level so to conform with wider sustainable projects. Knowing the problems concerning the use and governance of resources is prerequisite for further and efficient developments of a SES. Information also avoids clashes among community members since everyone knows their duties, how to manage issues, who to refer to when problems occur, as well as who has the authority to impose rules. Information becomes synonym of order, especially within a polycentric arrangement; when this polycentric social organization is clear, well-defined and widely acknowledged, mutual recognition, respect and trust can foster over time.

Knowing how to use and manage resources is central for sustainable actions within a SES: for this purpose, education is pivotal for an efficient resource management. Concretely, this can be done in a school, "multi-stakeholder co-learning platforms, transboundary collaborations, community-based adaptation and participatory scenario planning" (WGII, 2022, p.30). Training centers have also proved to be efficient ways to teach more sophisticated and modern working techniques to people; more specifically training centers were widely used in developing countries, especially during 1980s, when IMF and WB provided funds for "development projects". However, training centers are not only part of an historical past, they are widely used also today and proven efficient since they provide technical knowledge to youth and adults on how to achieve a maximum yield with less effort. An example based my personal experience may be provided: in the Karamoja region of Uganda the artisan production of beer was widely spread both for personal and commercial purposes. Unfortunately, this also led to alcohol abuse. As an attempt to overcome this issue, the staff of an NGO active there suggested a different use of malt, not for beer production but to create yeast to be used as ingredient for other products; this would provide precious nutrients for people that live in a region where daily calorie income is really low and where some people eat every two days. This is just an example of a better resource management which can lead to better social outcomes.

Education is cornerstone of a well-informed society and this is especially true when its access is equally spread among boys and girls: this is not an easy task in poor countries and in rural areas where all family members are involved in activities that allow them to live and earn an

income. This is one within the plethora of issues faced by many organizations and NGOs when educational centers are provided and promoted. It is a long-term process that may see its effects in one or two generations time: training centers are provided to adults who will learn and pass their knowledge to their children, who in turn will do the same with their children. Trust has to be gained and patience is needed especially when dealing with a complex SES. When the process described bares fruit its result is a more informed society. At this point, well-informed individuals can intervene and plan interventions that are context specific and tackle local issues, such as those connected to social, gender, income, and land access inequalities. Sustainable interventions, being bottom up or top down, always have to consider the local dimension, and only by doing so, a virtuous circus is created: knowing that a project is made for a specific purpose from which the majority can gain, this will be perceived as more legitimate and effective; this allows sustainable actions to occur, also through the collaboration of the community, and when proved successful, these will build the basis for innovative future projects. Again, polycentricity appears useful if not pivotal because it is about the coordination among the most vulnerable and marginalized local groups, governmental and non-governmental organizations.

2.4.6. Access to basic services and resources

Access to basic services and resources is essential for a wealthy and healthy community since it reduces vulnerability by limiting human and cattle exposure to diseases, allows people to carry on with their daily activities, to earn an income; this leads to a positive cycle leading to a general and relative alleviation of poverty which in turn allows people to have access to further basic services and resources and so on. The outcome is a healthier, wealthier, thus more resilient community and SES. Fostering access to land and resources becomes crucial; while, unsustainable human activities, especially in the case of large-scale land acquisition, certainly are an obstacles to an equal access to land. As previously explained, the most affected people are indigenous groups, communities living in rural areas such as farmers, small-land owners but also women and children who are directly dependent on natural resources but are also principal targets of large-scale land acquisition: such activities not only are replacing more sustainable small-scale activities led by locals, but they also take the only source of income of these poor people.

Moreover, access to basic services and resources are also connected to climate change: increasing drought periods interspersed with long periods of heavy rain leading to floods, are all events that combined reduce both quantity and quality of resources available, thus impeding communities to develop long-term sustainable living conditions. This has to be considered as a circle: climate change reduces access to resources; less resources available make the community more vulnerable and, in turn, less resilient; a less resilient community is one that is more exposed to climate change, which further undermines access to resources and so on. Evidence of such interconnections leading to a virtuous or vicious circle are also proven by the IPCC WGII, which focused on global and regional trends concerning the higher degree of vulnerability due to climate change. What is highlighted is the tight bound between society and the ecosystem, meaning that a resilient SES is less vulnerable and so less exposed to climate change. As already mentioned, the global hotspots of high human vulnerability can be found "West-, Central- and East Africa together with South Asia, Central and South America, Small Island Developing States and the Arctic" (WGII, 2022, p.12): this to prove how climate change undermines vulnerability and how vulnerability is also caused by climate change. These explanations show only in part the complex mechanisms at the base of SESs, suggesting that no single solution for the elimination of all the obstacles impeding a resilient SES to develop exists. However, the reduction in large scale land acquisition and land grabbing more broadly will certainly grant a more equal access to land and resources, thus leading to a more resilient SES.

2.5. Conclusions

The six enabling resilience conditions provided are elements that combined can help to build a resilient SES. However, converging all these points is easier said than done. As highlighted by Working Group II of the IPCC, limits to human adaptation and resilience building, such as land grabbing and climate change cannot be omitted. Nevertheless, analysing a SES trough these enabling conditions can help to define which are the weak and strength points of a SES, therefore, allowing scholars to suggest eventual solutions or adaptation programmes, which, if well-contextualized and adapted to local necessities, can foster resilience. These enabling conditions are functional because they can adapt to many circumstances in both rural and urban areas. This is in fact what will be done in the next chapter, in which the analysis of three study

cases will be conducted by considering each of the six resilience enabling conditions analysed above.

CHAPTER 3

3.1. Land grabbing in Uganda

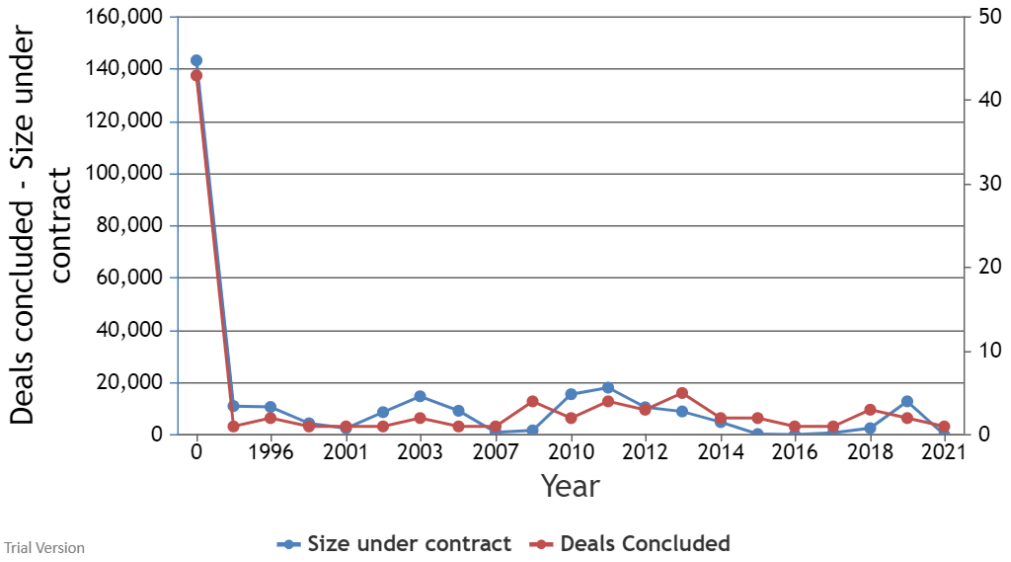
The focus will now move to an African country that exemplifies the global trend of land grabbing: Uganda. Lying in east central Africa, Uganda has a tropical climate with vast portions of fertile land which explains the centrality of agriculture for the Ugandan economy; in fact, together with the fishing sector, agriculture covers 80% of all jobs (National Association of Professional Environmentalists [NAPE], 2012). The ratio of the total population dependent upon agriculture is even greater in rural areas, "with over 85% of the population involved in and depending on agricultural activities" (Ashukem, 2020, p. 129). Vast portions of land have been attracting both national and foreign investors, who have found leeway because of the government's eagerness to foster investments. Land grabbing activities in the region are a cause of particular problems for local people, especially because of the high percentage of people depending on the land as their only means to sustain themselves. The reasons behind such problems are several and of various origins: historical, legal and political, all intertwined one with the other. To better understand the current situation in Uganda, it is necessary to go back in time to the colonial period, when Uganda was under the British administration: for this purpose, the next section will deal specifically with the historical background of land insecurity in Uganda, to then follow with an analysis of recent land deals in this country.

3.1.1. *Background of land insecurity in Uganda*

Even if land grabbing has spurred in the last two decades, it would be erroneous to state that this is a phenomena regarding the twenty-first century. In fact, land grabbing and land inequality more generally were typical features of the colonial land legacies set by colonialists to divide conquered land and territories. The *modus operandi* of colonialists was similar in many colonized countries and protectorates: in fact, in Uganda, colonialists followed the *divide et impera* rule, which resulted in socio-political status quo not that different from the current situation. Moreover, by observing the chart based on data collected by the Ugandan Land Observatory, which is reported in Figure 6, it is clear that before 1996 the size of land under contract was definitely bigger if compared to the size under concluded deals following that year. This was probably due to the fact that during the 1980s Uganda was in a situation of partial political stabilization that allowed the government to better follow the issues of land rights; this is to be considered together with a global issue concerning land inequality characterizing the

1980s: it is in this period that liberalization of agricultural policies in developing countries occurred through market-led policies. Not surprisingly, "in 1989 a joint study by the University of Wisconsin Land Tenure Centre and the Makerere Institute of Social Research funded by the World Bank strongly advocated the promotion of freehold tenure security for the whole of Uganda, as it would help facilitate the commercialisation of land in the land market, and the use of land titles as collateral for credits" (Ashukem, 2020, p. 129).

Figure 6 - *Size and number of concluded deals over time in Uganda*



Note 8. From Uganda Land Observatory, 2022. © Copyright 2022 by Uganda Land Observatory. (https://ugandalandobservatory.org/analyze).

However, this system did not last for long. With the 1995 Constitution of Uganda the pre-colonial and colonial land tenure system was re-established and then re-affirmed by the Ugandan Land Act in 1998. According to the Constitution, the formally recognized systems of land tenure are four, namely customary, freehold, mailo and leasehold. The focus will now move to customary tenure; the main reasons of such focus are two: firstly, customary land tenure is estimated to characterize approximately 80% of all land in Uganda; secondly, scholars and associations around the world agree with the fact that land grabbing has caused problems

for local people who have customary land rights. Finally, two of the cases analyzed in this work will deal with communities whose customary rights have been constantly violated.

One could argue that the issue connected to customary land tenure should not exist given both the Constitution and the ULA providing customary landowners with some legal recognition; however, an article about the constitutional and legislative right to land provides a detailed explanation of the inadequate legal protection in spite of the "constitutional and legislative guarantee to land in Uganda" (Ashukem, 2020, p. 121). The author of the article, Jean-Claude N. Ashukem, clearly explains the root of the problem, that is the registration of customary land rights. Section 5 of the ULA in fact "enables holders of customary land rights to acquire a certificate of customary ownership" which at first sight may be considered a step forward in the recognition of landowners' rights (Ashukem, 2020, p. 133); in fact, the certificate allows people to be protected from usurpation and eviction, but this is easier said than done. The traditional land system is based on an oral transmission of land ownership leading many people not to acquire certificates, together with the fact that "most locals living in remote areas are not aware of the need to acquire the supposed certificates" (Ashukem, 2020, p. 139). It is in the lack of these certificates that "the government may capitalize on this and forcibly take these lands and lease them to foreign investors for investment purposes at will" (Ashukem, 2020, p. 138). In practice, this means that any holder of land under customary land right devoid of a certificate of customary ownership could be deprived of their land at any time.

3.1.2. *Data analysis*

The brief historical background was to provide an overview of the historical roots of current land legacy as well as to prove that current inequal land relations and management do and still have a strong relation with colonial legacies. If in the colonial period local people, especially pastoralists and ethnic minority groups were deprived of their resources or evicted, today the situation is not that different. Land grabbing becomes a residue of colonial land management in Uganda and this is proven by the literature reporting the rise in the number of land grabbing cases in Uganda. This statement can be proven by analyzing data from Land Matrix platform: following the same reasoning behind the global data analysis reported in the previous sections, the selected deals are those in their start-up and productive phase. Uganda perfectly exemplifies the global trend of land grabbing: in fact, the Ugandan Government is criticized for having allowed foreign and local land investors in the country. Proof of this is the number of deals

registered in Land Matrix which have been analyzed and reported in Table 3, following the same reasoning behind the regional data provided in the sections regarding global and regional land deals.

In order to define the number of land grabbing deals in Uganda, Land matrix is of great support. In fact, what was found in the platform is that from 2008 up to date Land Matrix reports 43 concluded and intended deals of which 32 were in their start-up or operational phase. Further filters were set in the platform considering the concluded deals made in periods from 2008 and 2012 and those from 2012 and 2022 only. What resulted is that the deals made in the first period were 17, only considering activities in their start-up and productive phase; while, in the second period, 20 concluded deals resulted from the data analysis covering a surface of 45 655 ha. Such results have been reported in Table 3. Four out of the twenty cases were already operational in the first period 2008 to 2012; this suggests that Uganda does exemplify the global trend of land grabbing that shows a slight increase in the last roughly fifteen years, especially if we consider that of the total deals in Uganda reported in land matrix database, without the failed ones, is of 65: this means that 22 were the number of deals made before 2008 while 43 those made from the financial crisis onwards; the number of deals doubles.

Table 3 - Comparison of concluded deals over time in Uganda in the periods 2008-2012 and 2012-2022

Country	*Concluded deals 2008-2012*	*Concluded deals 2012-2022*
Uganda	17	20

Note 9. Data collected from Land Matrix Platform on March 10th, 2022. (https://landmatrix.org/map/).

Similarly to the global trend, the main investors in Uganda are mainly from Australia, the US, China, UK, India to mention just some. Table 4 below reports the top investors in Uganda, the number of deals and hectares under contract.

Table 4 - *Main land investors in Uganda*

Country	*Hectares*	*Deals*
Mauritius	29773.00 ha	2
India	21719.00 ha	7
UK and Northern Ireland	20605.00 ha	5
USA	18905.00 ha	7
Kenya	16528.00 ha	7
UAE	10525.00 ha	2
Norway	10442.00 ha	2
Netherlands	10000.00 ha	1
Germany	8930.00 ha	3
Malaysia	7591.00 ha	1
Denmark	4286.00 ha	6
Australia	2428.00 ha	1
China	1908.00 ha	3
South africa	404.00 ha	1
Switzerland	388.00 ha	1
Canada	3.00 ha	1

Note 10. Data collected from Land Matrix Platform on March 10th, 2022. (https://landmatrix.org/map).

According to FOCSIV report of 2012 "land grabbing in Uganda was intensifying and spreading throughout the country", and the numbers reported are the proof. In spite of the quantitative analysis made, which provides a statistical review of the trend of land grabbing in Uganda throughout the years showing its increase regarding the period before 2008, what is of utmost importance for the purpose of this work is considering what there is behind these numbers. Not only considering the consequences and impacts that land grabbing activities have on local

communities and the environment is important, but also how local communities react, resist and reinvent themselves in the face of these issues. Land grabbing becomes a further obstacle for local communities to prosper by exacerbating already vulnerable situations. What this work wants to prove is that land grabbing is undermining local people's resilience, thus their capacity to overcome not only the difficulties this global phenomenon is causing, but also other challenges such as the global issue of climate change, local socio-political conflicts, as well as the dire socio-economic conditions that set Uganda into the category of the one of the poorest countries in the world, with around 75.6% of the population living on less than $2 a day (Interactions for Gender Justice Research Team, n.d.). For this reason, this work will deal with three specific cases of communities that have been affected in different degrees by land grabbing in Uganda.

3.2. Case study 1: Learning from resilient pastoralists

The first case of this chapter is about pastoralism in the Karamoja sub region of Uganda. The aim is to define the whole degree of resiliency of the pastorals living in this region, as well as the degree of resiliency of the whole SES, in which they are embedded. In order to do so, the next sections will deal with the following contents: firstly, the context characterising Karamoja will be explained by providing a brief but comprehensive overview of the social, political and environmental situation, as well of the issues faced by pastoralists living in the area. Attention will be given to land, given the impacts of land grabbing activities in the region exacerbating historical land related conflicts. Secondly, a traditional practice called Etamam will be described and proven to be an efficient mechanism to face the issues pastoralists in Karamoja are facing, thus strengthening resilience. Finally, following Ostrom's institutional framework, both socio-political and ecological contexts characterising Karamoja will be described to provide a brief but comprehensive view of the situation. More specifically, this will be done by analysing each of the six resilience enabling conditions in the specific context of Karamoja.

3.2.1. *The context*

As shown in Figure 7, Karamoja is a sub-region located in the north-eastern part of Uganda, with a population predominantly composed by pastoralists, who "experience the worst forms of inequality against the rest of the country, especially through the poverty dimension" (Karamoja Development Forum [KDF], 2020, p.5); in fact, the regional poverty indicators reported by the government suggest that Karamoja has the highest poverty indicators in the country, "with 61% of the total population of 1.2 million living in poverty, against the national average of 21%" (KDF, 2020, p.5). Such level of poverty is to be considered as further exacerbator of an already dire and complex situation characterising the sub-region. Fortunately, after decades of conflicts,

Figure 7 - *Karamoja sub-region*

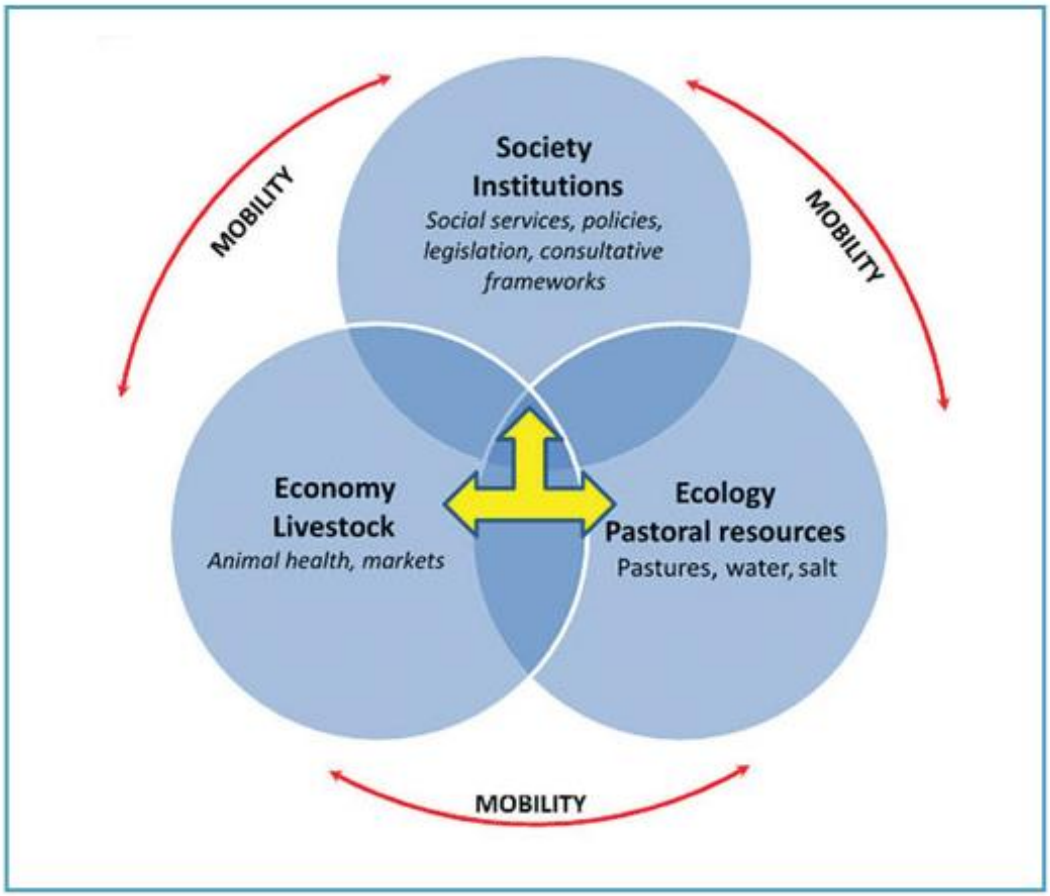
Note 11. Adapted from ACT-U, n.d. Copyright © ACT-U. (https://www.act-u.com/i-nostri-progetti/karamoja/).

Karamoja is now experiencing a relative peaceful moment thanks to a government disarmament programme that ended in 2010. Certainly, this is an achievement for the whole country that allowed a slight and general improvement in the daily lives of the Karimojong. Karimojong is the name used to call the pastorals living in the Karamoja region and they are the only recognized pastorals by the Ugandan government (Waiswa, et al., 2019). Karimojong and pastoralists in general, can be defined as resilient in their nature: as matter of fact, pastoralists continually persist and adapt to the circumstances they face in their daily activities. Despite being resilient, the Karimojong still remain exposed to several issues: generally, the problems pastorals face, are those connected to water scarcity, land alienation, environmental degradation, conflictual situations especially connected to cattle rustling, dire living conditions, and cultural threat derived from external events such as development projects. Given the growing threats Karimojong are facing, it is worth analysing them more in depth as these are general challenges useful to understand the study case.

Athough pastoralism is based and thrives on mobility and moving from one place to the other allows the cattle to find food notwithstanding arid climate conditions, evidence suggests that Karamoja has recently began to experience longer drought periods with erratic and shorter rainy periods, forcing the Karimojong and their cattle to walk longer distances more frequently. Already at the beginning of this century, the chaining climate conditions were reported to be negatively affecting Karamoja and its people; more recently, in a report published by the *Karamoja Development Forum*, challenges faced by Karamoja were highlighted with specific reference to the consequences of climate change on the Karimojong. All this is further exacerbated by the reduced common pastoral areas due to land grabbing activities that use land for other purposes, such as the recognition of protected areas, the establishment of mining activities, building of transportation systems among others. Usually, pastoral land is not that suitable for agricultural activities, but in Karamoja several land grabbing activities occur also for this purpose. This is dispossessing people from their ancestral lands, over which they have a consuetudinary right recognized by the constitution. However, many Karimojong lack of the certificate of ownership, which has been introduced by the 1998 Land Act and the 2013 Uganda National Land Policy (NLP), while others do not even know about the need of such certificate to prove their land ownership. This provides leeway for investors in building infrastructures or national protected areas such as national parks, thus rendering the Karimojong dispossessed and threatening the natural landscape. Figure 8 shows the three contexts in which pastoralism

exists today: these are the social institutions, the economy based on livestock and the pastoral resources the ecosystem offers. These three pillars have taken shape in a specific context in which pastoralists constantly move to find resources, feed the livestock and build social relations. However, land grabbing is undermining all this: grazing land and green areas are reducing in both quantity and quality, leading the various groups of Karimojong to struggle for resource access; not only this issue leads to food uncertainty but also to a general condition of insecurity: in fact, for the Karimojong moving from one place to the other means encountering other pastorals and, in some cases where resources are scarce, clashes and disputes among pastorals can result. All this reduces resiliency of both the Karimojong and the whole SES. To further complicate things is the general negative perception the government has towards pastoralism, which is seen as a backward practice that clashes with the national development programme aiming at building more infrastructures, developing a richer transportation network and guarantee tourist attractions through the creation of national parks and protected areas, among other national development projects. In the face of all these issues, Karimojong resist, persist, adapt and transform. The next section will report the example of a traditional practice among pastoralists which has transformed giving birth to a proper organization.

Figure 8 - *The three pillars of pastoralism*



Note 12. The box containing the three pillars represents the social, political, and economic context in which pastoralism exists today. From "Pastoralism in Uganda: Theory, Practice, and Policy," by C.D. Waiswa, B. Mugonola, et. al., 2019, International Institute for Environment and Development, 1-260, p. 23. (https://karamojaresilience.org/wp content/uploads/2021/05/tufts_1939_pastoralism_uganda_text_book_v10_online.pdf).

3.2.2. *Etamam*

As mentioned in previous section, pastoralism has faced several changes and with it also traditional practices such as Etamam. Etamam literally "means 'sending a message' or denotes the practice of sending a message to another individual or group of individuals" (KDF, 2020, p. 7). Among the Karimojong this term is used to refer to a traditional practice among pastoralists based on the arrangement and negotiation for the access of resources. Etamam was introduced during the colonial period because of the introduction of boundaries by colonialists. This traditional practice of "sending a letter" of permission to access resources then became

embedded in the daily lives of the Karimojong until today, when Etamam is evolving and adapting to current challenges. In fact, land related conflicts are not only part of the colonial period, rather they are a current issue. Given the scarcity of resources due to climate change and other land grabbing activities, Etamam has adapted to become an "important institutionalised mechanism" capable not only to face challenges but also to maintain what became a traditional practice that risks disappearing (KDF, 2020, p. 7). This practice is a glaring example of collective bargain among some of the various ethnic groups present in the Karamoja region, namely the Matheniko, Jie, Dodoth, Bokora and Turkana of Kenya; more specifically, some members of these groups are hosted in, and share, the same grazing area called Kobebe, in Moroto district. It is quite intuitive that pastorals are tightly bound to nature but when a man, participating in Etamam, was asked what Kobebe signifies for him, his answer was the following: "Kobebe means land, grass, water and people" (KDF, 2020, p.6). This is very significant answer that underlines not only the vital importance of nature for the survival of pastorals but also the importance of social ties and traditional practices for the Karimojong. For instance, the cattle are not only considered a source of income, that provides milk and meat, but also show the social status of pastorals in the community: the more animals you have, the more powerful you are considered, thus respected. Etamam is a proper organizing mechanism within a SES, which is shaped by peaceful and organized relations among resource users, enabling them to manage access to the SES resource systems, such as grazing land and water. Additionally, Etamam is also a mean to mitigate conflicts which have been part of the recent history of Karamoja. For all these reasons, Kobebe resources are considered of vital importance by the pastoralist groups who believe both access and sharing of resources are important for human life.

3.2.3. *Resiliency analysis*

Etamam is an example of a practice that is shaped by the socio-ecological system in which is embedded and at the same time it renders the same SES more resilient. To better prove this, a deeper analysis of the six elements defining a resilient SES may be conducted to define the overall degree of resiliency and detect both strength and weak points.

Collective action and cooperation

The first enabling condition analysed is collective action and cooperation in the SES in which Etamam is conceived. By definition, Etamam is a practice that enables negotiation among

different pastoral groups, who have to move from one place to the other especially because of water scarcity; providing this definition, partly answers to the following questions: why do Karimojong pastoralists cooperate? And what avoids them to fight for common resources such as water and grazing land? However, the answers to these questions are far from straightforward given the complexity of the SES in regard.

First of all, what leads pastoralist groups involved in Etamam to cooperate and avoid clashes can partly be explained through a cost and benefit analysis. In fact, participating to Etamam has its benefits: firstly, mutual, controlled and equal access to resources is managed through Etamam; secondly, a more sustainable use of water and grazing land results from Etamam practice, leading to beneficial outcomes for the environment and ensuring resources to regenerate; finally, peaceful relations are shaped or maintained among the different ethnic groups. These benefits of participating to Etamam are therefore mutual, at least until cooperation through collective action occurs: the widespread need of water and grazing land translates into a reciprocal provision of resource access and management that allows pastorals not to fight over resources. The reasoning behind this mutual access provision is quite logical and it may be explained throughout a simple but concrete example: if the Matheniko allow access to the Turkana today because water is available there, it is more likely that in the future, when water will be scarce where the Matheniko live while available near the Turkana, these will allow the Matheniko access. The same reasoning is true if the opposite occurs: if access is not allowed by the Matheniko the risk of not being accepted by the Turkana in the future is definitely higher. In this regard, someone could argue that in this type of bargain, the tendency to freeride can be latent, thus undermining the efficiency of collective action and cooperation. However, the search of, and negotiation for, resources has also cultural and socio-political roots contributing to overcome the eventual tendency to freeride. To provide an example, the 1974 Lokiriama Peace Accord, which defined peaceful coexistence between the Turkana of Kenya and the Matheniko of Uganda, is considered still today a key point for both communities to maintain peaceful relationships and provide mutual access to resources. Certainly, this accord is useful as it helps to avoid free riding; however, the *Karamoja development forum* reports the success of Etamam practice also among the other ethnic groups, this because the peace accord is not the only guarantor of mutual contribution. Another reasoning that encourages mutual access and cooperation, and reduces the tendency to freeride, is the acknowledgment of resource scarcity in the region: the Karimojong pastoralists know that they all need water and

land to survive and none of them has total control of water nor of pastureland. This is especially true since climate change has reduced these resource systems in both quantity and quality. The most sensible choice is to be hospitable especially if pastoralist involved in Etamam want reciprocal share of resources and peaceful relationships to be build. As reported in the *Karamoja Development Forum* (2020), pastoralists do not put into question the possibility of accessing resources because these are considered as reciprocally granted. They also cooperate for conflict mitigation: after long tumultuous decades, from the 1980s to 2010, the Karimojong realized that natural resources were vitally important; not surprisingly several conflicts were over natural resources, whether these were cattle, kraals or small agricultural fields, these were the main pull factors for pastoralists to gain access in villages where other ethnic groups were living. Today, the situation is more peaceful. In addition, the Karimojong involved in Etamam understand the importance of having and allowing access to resources not only for living but also as a mean to maintain peaceful relationships and adapt to scarcity of resources due to climate change. Being considered a "conflict-free movement" (KDF, 2020, p. 6), Etamam is the proof that in times of crisis, in this case scarcity of resources for the various reasons mentioned, people cooperate to better persist and adapt to the circumstances. All these aspects considered, collective action and cooperation seems to function among the Karimojong: this allows them to persist and adapt during stressful times thanks to the reciprocal resource access granted by Etamam practice. In addition, this mechanism of building relationships shows their willingness to shape a more peaceful future that allows them to prosper and transform.

Clear system of rules

Despite the challenges faced by pastoralists can be various and can change due to environmental challenges or political and ethnic disputes, Etamam has survived and has been preserved. This has been possible also thanks to the strong adherence of several actors to the rules shaping Etamam. In fact, not only pastoralist groups are involved in Etamam, but also other actors including "districts local governments of Moroto, Kotido, Napak; the Turkana County Government and Turkana sub counties, nongovernmental organisations, community animal health workers, political leaders, herdsmen, security forces including the police, Uganda Peoples' Defence Forces, local defence unit, opinion leaders, Elders, peace committees" (KDF, 2020, p. 6). At first sight managing rules among all these actors may appear confusing; nevertheless, there is a system defining who does what and who does what with what: this decision-making mechanism may be summarized for clarity issues. First of all, the request for

mobility and access to resources is authored by the elders, who are respected by the youth and the community members in general. When the request is defined, a report is made and brought to the Local Council and the sub county chairpersons, who have to approve the report, thus the request of mobility (KDF, 2020). Once the report is approved, this is sent to the district leadership, who, in turn, sends copies to other Kraal leaders; in this way all kraal leaders know about the need for some pastoralists to have access to resources and they can discuss about the potential host district available and suitable for the visiting group. Finally, when the district is identified, the visiting group is allowed to move there and access to resources. Now that the mechanism legitimizing the movement of different ethnic groups is defined, it is important to highlight that, rules are provided to the visiting pastoral group, who in turn must comply with them. Usually, these rules are stop burning grass, no cattle theft, go in defined grazing zones only, watering animals at designated places only, among others. It is clear that the rules are provided by the community at the bottom level, this not only means that local people are crafters of rules, but also that these rules are definitely complying with real and everyday social issues.

In all this process, also government leadership has a role: in fact, this takes the request for mobility and conflict management and visits the places that groups wish to migrate to. The government involvement in Etamam has evolved just recently; while in the past, this practice only involved community members without sharing with the government. The system described is definitely a polycentric one, which allows shared normative understanding of what a participant in a position must, must not, or may do in a particular action situation, to work efficiently and at different levels. This multilayer cooperation allows Etamam to function; it allows community members to face challenges, overcome conflictual situations; finally, the recent involvement of the government is sign of the evolution, thus transformation, of *Etamam*. The system of rules, in the case of Etamam, is proved efficient, allowing pastorals to manage and use resources in an equal and sustainable way and to contribute to the creation of a more resilient SES: as a result, the socio-ecological system is able to face the challenges to which the SES is exposed, and at the same time it manages to evolve.

Efficient Monitoring mechanism

This section is about the monitoring mechanism, which is important for the detection of rule compliance and non-compliance, as well as for a fair and sustainable use of resources. In the case of Etamam, rules are widely accepted especially for two reasons: partly because these rules

are the result of a long history of traditional practices handed down from generation to generation and for this reason people tend to be respectful and comply with rules; another reason is that rules reflect the values of local people, who are the crafters of such rules. In this way pastorals can report everyday issues the community faces. This leads to a wider and deeper acceptance of rules, being valued as relevant in facing concrete issues and not as obstacles in their daily activities. In the case of Etamam, the probability of rule incompliance is lower but not inexistent, making it necessary to have an efficient institutional mechanism that monitors whether rules are followed or not. A monitoring mechanism can be detected in Etamam and this can be considered functional thanks to four main aspects: polycentricity, social cohesion, mapping grazing areas and technology. As far as polycentricity is concerned, Etamam practice occurs and functions also thanks to the polycentric way through which it functions: the fact that many people are involved and have a role in Etamam, discourages eventual non-compliers not to follow the rules; again, polycentricity also means that mutual aid in tracking thieves of cattle becomes easier because the government is supported by a wider social network of collaborators, who formally report the legitimate movements of groups in search of water and green lands. This formal update allows both the government and pastoralists to be always informed on the rules set, the ongoing disputes and the management of cattle thefts. Secondly, social cohesion when facing common issues, in this case water scarcity and little grazing land available, is pivotal in encouraging people to collaborate, thus comply with norms and detect non compliers, who are considered as traitors of the whole community. Mapping grazing areas is another crucial element that renders the detection of unfamiliar people easier. There are various reasons behind the creation of these maps: first of all, maps are useful to detect "potential conflict hotspots" (KDF, 2020, p.16) that are those areas where conflicts are more likely to occur or are occurring among pastoral groups due to both historically rooted conflict and more recent ones; the other reasons are to map grazing areas and migratory corridors, define livestock services such as cattle dips, dams and markets, where pastorals can sell animals and products, and define the stakeholders involved in the services of pastoralism. By this mapping exercise, the weaker areas and sectors can be better detected and consequently managed: this fosters a better understanding of the whole SES in both its strong and week points. Finally, technology is also providing useful means in both the management of Etamam practice but also in the monitoring mechanism of compliance and non-compliance. Being able to ring any of the kraal leaders, allows pastoralists to be informed of possible risks of cattle theft and provide live information

to the local government, who in turn will send their officials to monitor the grazing areas if needed.

Despite rules are set and various community members contribute to the detection of thieves, livestock thefts in Karamoja continue to happen frequently. This is when sanctions turn useful: in fact, an important aspect of an efficient monitoring mechanism is the sanctioning part, at least until this is efficiently and equally implemented. Etamam is based on a resolution that defines roles and duties of the community when cattle rustling activities occur. More specifically, after two years from the end of the disarmament programme, a resolution was set to stop these events: this is the Nabilatuk Resolution or Morutit Resolution of 2012, which sets a formula to be applied when thieves are found and have to pay a compensation. The formula of the compensation may be provided with an example: when the thief is detected by the armed officers or the elders for having stolen one cow, he must give the owner twice of the quantity stolen, in this case two cows. Additionally, an extra compensation, thus a third cow, must be provided by the thief to the elders who detected the thief. This formula is synthesized as follows: X2+ 1, where X is the cow or the animal stolen more generally, 2 is twice the number of cows or animals that goes to the owner of the cow, and +1 is the extra going to the thief detectors, who can be members of the armed officers or of a peace committee (KDF, 2020). This formula is set with the aim of discouraging thieves to steel cows given the high cost they face if, and when, caught. Another factor that discourages thieves to steal is the communitarian spirit with which the resolution was conceived, designed and implemented: this means that not only the thief is considered responsible but also its family and community. This is especially true in the case the thief is not able to pay back the whole compensation. When this occurs, the family or the community shares the liability, thus the temporary payment of the compensation. In this case, the thief is expected to repay the family or its community if not in this life, throughout its children. This is to ensure the payback to the aggrieved party, but also to discourage cattle rustling since this sanctioning mechanism goes deep into the social networks of the community. This is true at least in theory. In practice, cattle theft is still widespread, as well as extrajudicial killings are reported to occur in Karamoja as forms of collective punishment. The resolution was developed thanks to the local effort of peace committees, NGOs supporting local leaders to bring the cattle rustling to an end. The local support during the disarmament programme and when it came to the detection of cattle rustlers underline the community cohesion when dealing with collective issues and explain why the resolution is “widely seen as a local effort, designed

and owned by the communities as a mechanism" of conflict mitigation (KDF, 2020, p. 23). The fact that the resolution bases its principal assumption on the communitarian responsibility, which is also basis of the Karimojong traditional system, makes the community members involved in the detection of thieves; this can, and sometimes does, result in a double-edged sword as in the case of extrajudicial punishments.

Unfortunately, according to the *Karamoja development forum* (2020) "law enforcement by the police is low" (p.24) in this post-conflict period; therefore, many herders call at the KDF complaining about the problems connected to the implementation of the resolution asking for some military officer or district official responsible for intervention. This suggests that the Nabilatuk Resolution needs to be reviewed and supported by a proper management framework composed by ad hoc and controlled groups, institutions and bodies with formal responsibility of ensuring the payback and the detection throughout lawful means. According to the Resolution, elders and communities are required to cooperate with peace committees and the formal government system in tracking stolen livestock, identify offenders and those aiding and abetting livestock thieves. While it is common that, once having detected the kraal of the thief, the formal tracking team leaves the payment part to the kraal leaders, it is suggested that the whole procedure is followed together with formal groups of experts to ensure a fair and equitable execution. Managing such a system is easier said than done, especially given the nature of the resolution deeply embedded in "the communitarian spirit of most Karimojong peoples" (KDF, 2020, p. 23) on the one hand, and the executive system formally duty of police groups at the governmental level, on the other. Clear and well-defined roles have to be reassigned trough a revision of the Resolution which is reported to be poorly implemented generally.

Polycentricity

Etamam is also a successful empirical example of a polycentric approach tackling the collective problem faced by pastoralists, that is water and grass scarcity. Not surprisingly, besides being a collective problem, water and green land scarcity is also the main push factor for pastoralist to migrate in other grazing zones. By working in a polycentric manner more groups and sub-groups are involved and have a role in the Etamam practice, which manages movements of pastorals groups in search of resources; thanks to Etamam, not only the duties that community members have within a SES are identified, but also shared responsibilities and interests result

from such practice. Evidence suggests that involving actors from different levels is beneficial to the community and the government: the former, benefits from the peaceful relationships that raise from the dialogue across different actors enabling them to continue grazing and accessing to resources; the latter, benefits from the peaceful relationships among the groups and, thanks to the system of delegation, is able to better control the whole community. Since more actors at different levels are involved, the monitoring mechanism is more efficient and non-compliers are easily detected, the basis for building a more resilient SES are definitely set. Certainly, such a system can face several obstacles: for instance, corruption and opportunism can spoil the synergy of polycentric systems especially in countries such as Uganda, where corruption is still high among politicians and at all levels of society. Another disadvantage of polycentricity is the fact that advising everyone is time-consuming, this can make pastoralist groups, who are in desperate need of water access, to wait too long before being legitimized to access resources. The reality is that some shepherds wait, while others cannot or do not wait for the letter of permission to arrive: this happens because, no bureaucratic procedure can stop hungry and thirsty cattle to search for water and grass in greener areas.

In general, polycentricity at the base of Etamam ensures social cohesion and a better resource management, thus rendering the whole SES more resilient. The gains and benefits from Etamam are far more than the costs and this is proven by the fact that Etamam is persisting and adapting to current issues. Various are the examples of successful dialogues among different groups reported in the *Karamoja development forum*: an example is the mapping exercise that saw close to 500 people across the region cooperating to identify grazing corridors, conflict hotspots and water sources (KDF, 2020). This is possible also thanks to the clear definition or roles across different levels and the coordination among Kraal leaders with the other actors in managing mobility. Karimojong are aware of such coordination and the benefits polycentricity is leading to and this is proven by the words of a kraal leader called Ariko Lomuria, whose photo is portraited in Figure 9. His discourse was reported in the *Karamoja Development Forum* and his words may be reported here:

> We kraal leaders are linked and coordinated in a way that we know our main duties across all grazing corridors for example Beye and Natimu in Kotido, Ekeno in Turkana, Ariko in Matheniko and Aperi in Napak. During migration, we put our own “ekokwa” as kraal leaders to discuss management of mobility, livestock and shepherds. We work with the sub county leadership and district security department. This made linking with the

leadership easy. After writing the letter and getting it endorsed by the sub county Chairperson, it opened way for us to reach to the district chairperson and Resident District Commissioner (p. 11).

Figure 9 - *Kraal leader Ariko Lomuria speaks to KDF's Lucy Manang during the interview*

Note 13. From "Etamam: The Process and Mechanism of ensuring negotiated access to pastoral resources in Karamoja," by B. Lomuria, E. Tebanyang, et al., 2020, Karamoja Development Forum, p.10. (https://www.kdfug.org/wp content/uploads/2021/07/2020_The-Karamoja-Pastoralist Magazine_ETAMAM_01.2020.pdf).

Etamam was born as a bottom-up initiative and the cooperation among community members is conceived as crucial for the functioning of Etamam. Reciprocity and the sense of community are two core elements in the Karimojong tradition and culture and this is probably the key that makes a polycentric system such as Etamam work, persist and evolve.

Informed society

What is crucial for a SES to be resilient is a well-informed society. This characteristic must go hand in hand with the elements analysed up to now, that are rule system, efficient monitoring mechanism and polycentricity. This means that when rules are widely spread, acknowledged and easy enough to be understood by all community members, the society becomes an informed society; the same reasoning can be applied to the monitoring mechanism which in turn must be composed by groups that are well-informed about their duties and responsibilities. When this occurs, the result is a well-managed polycentric system shaped by informed people. As far as

Etamam is concerned, there are different ways to spread information: for instance, thanks to the various reports, meetings, dialogues among different group elders as well as among mediators and non-governmental organizations, information is widely spread among all the actors involved in Etamam. Moreover, education plays a crucial role when it comes to understand the system of rules and changes occurring at the governmental level. This is also true from a gender perspective; usually, in Etamam women do not participate directly in the negotiation process, rather their involvement in Etamam is a pragmatic one: women are responsible for collecting food and milk, cook for the herdsmen, look after the children and take animals for watering. When it comes to migrate, women are also frontrunners in preparing beddings, carrying luggage and children, and constructing temporal shelters. However, not all women are excluded from the Etamam negotiation process: educated women with leadership capacity are included as well (KDF, 2020). When this occurs, women fully participate and are empowered to contest and be elected to leadership positions; this is also thanks to "the numerous trainings from NGO's and government" (KDF, 2020, p.21). Again, education, trading and spread of knowledge and information is important in traditional practices of Etamam. Women are also considered peacekeepers in shaping conduct and attitudes of herdsmen allowing conflict mitigation. Finally, the number of children attending school among the Karimojong is increasing and this is believed to be an obstacle for some pastorals and a benefit for others. In fact, those who consider education an obstacle is mainly due to the fact that, in such rural and poor areas, children are great participators in ensuring the family with an income; for this reason, education is perceived as a waste of time and energy. However, many Karimojong consider education as a benefit from the moment that well-educated children are crucial in avoiding future conflicts to occur, as well as more capable of dealing with the evolving situation that Karamoja is experiencing. This reasoning can be applied to the case of land grabbing: as consequence of the increasing land grabbing activities in the Karamoja region, informing people about their consuetudinary right over land and the need of a certificate of ownership is of vital importance. Of utmost importance is that the government provides these certificates but also that the people have the tools and knowledge to understand the contents of these legal documents. In fact, the steps for owing a certificate are clearly defined, allowing many people in Uganda to be issued with a certificate. The problem is that many are suspicious or do not have money to afford an attorney; often, what happens is that investors offer a higher amount of money to the government who in turn provides the investor with the certificate. Unfortunately, land grabbing

is a phenomenon in which the law of the strongest prevails at the expense of the common people. Fortunately, there is evidence suggesting that a raising number of certificates of customary land ownership have been provided in other subregions of Uganda suggesting that it will not take long that this trend will spread also in Karamoja (Global Land Tour Network, [GLTN], 2020; GLTN, 2021). Nevertheless, the cases of eviction and reduction in green areas are increasing trends as well, especially nowadays that climate change is threatening entire SESs around the world.

Access to basic services and resources

The first question pastoralists involved in *Etamam* ask is: Where shall we look for grass and water? (KDF, 2020) For this reason, all family members of a pastoral community contribute to the provision of food and income: men, children and youth are all involved in the livelihood activities such as livestock production and marketing among others (Waiswa, et al., 2019) and when resources are scarce, pastoralists migrate. In the context of pastoralism, migration refers to the temporal or permanent movement of pastorals and their cattle from one grazing land to another. Today, the push factors that make these groups migrate are connected to resource access, which is what Etamam sought to manage through a well-defined migration system. Despite Etamam being crucial for the management of resource access, the main issue faced by pastoralist is the little resources available. In Karamoja migrating for water and grass is becoming increasingly difficult due to climate change, reduction in grazing land and competing land uses more generally. Land conflicts today are mainly connected to the expansion in agricultural and mining activities led by investors who privatize former grazing areas. Detecting the exact number of ongoing activities in the Karamoja region reducing grazing land for pastoralists is challenging due to the lack of transparency of such land grabbing practices; nevertheless, it is reported that "over 60% of the Karamoja land surface was licensed out for some mining activity" (KDF, 2020, p.16). The consequence is the reduction of the grazing corridors, rendering increasingly complicated migration and resource access for pastoralists. When a community based on pastoralism faces difficulties in achieving vital resources, this becomes definitely the main problem, which gives rise to further social issues.

To render the current situation even more complicated for the Karimojong is the issue of climate change: as reported in the *Karamoja development forum*, migrating to distant places at the opening of the drought period was easier in the past. Today, that rain is erratic and the dry

season longer, finding a greener place with water sources available is increasingly difficult. Climate conditions also render grass less nutritious, animals get sick and people suffer from hunger. Fortunately, "a reduction in livestock mortality and an increase in the market value of livestock as a result of improved access to livestock services including veterinary services, cattle crushes, livestock markets and slaughterhouses" (KDF, 2020, p.17) is reported, allowing pastoralists to earn something and improve their conditions. Nevertheless, the situation in Karamoja is still dire.

However, if on the one side, reduced resource access is an issue undermining the resilience of the SES, on the other, pastoralists have been showing their ability to persist, adapt and transform in the face of these challenges. In fact, many Karimojong pastoralist have embraced "the practice of preserving rangelands and practicing rotational and seasonal grazing" (KDF, 2020, p. 15); this means that each group within *Etamam* create and conserve their rangeland during the wet season and move in grazing lands nearer to water sources in the dry season. Cattle have access in specific zones since "the rangelands for the big cattle and the young ones are not the same" in fact, "each of these categories have their own in each of the seasons" (KDF, 2020, p.15). This proves the ability of pastoral to manage access to resources and to organize in a way that the whole SES can become more resilient: pastorals and their cattle can access to grazing lands thanks to the organized mechanism behind Etamam practice; additionally, by embracing the rotational practice the grazing land has time to regenerate and compensate the loss caused by land grabbing activities that exploit the soil and its resources.

3.2.4. *Conclusion*

All things considered, pastoralists proved to be able to persist and adapt to the challenges faced. This can be seen through the evolvement of the practice of Etamam, which has gone through a process of change with respect to the one used in colonial times. This because SES are in continuous evolvement, resources become available, endogenous and exogenous challenges are always under the cloak. This leads pastoralists and all the actors involved in Etamam not only to persist in the face of challenges but also to adapt and transform. Technology has reached rural areas in the last decade and this was not the case at the beginning of the century. Writing reports is a further substantial transformation in the traditional way Etamam used to be conducted: in the past every decision was made orally and the practice passed down from generation to generation. This still occurs but reports are formal documents able to protect the

rights of the community members. For some, these changes are considered a threat to pastoralism and Karimojong traditions; for this reason, many still look at members of NGO's and governmental organizations with suspicion. To raise uncertainty to the future of pastoralism, is the proliferation of mass land acquisition for investment in the Karamoja region which is reducing access to grazing lands and making an unsustainable use of land, which is vital for pastoralists. The future of pastoralists remains uncertain but the spread of technology in the region can have also positive impacts such as improving livestock services, thus rendering pastoralism a win-win solution for both the government and pastoralists. Etamam is the proof that pastoralists, which are generally considered backward people, do have the tools to build a resilient SES.

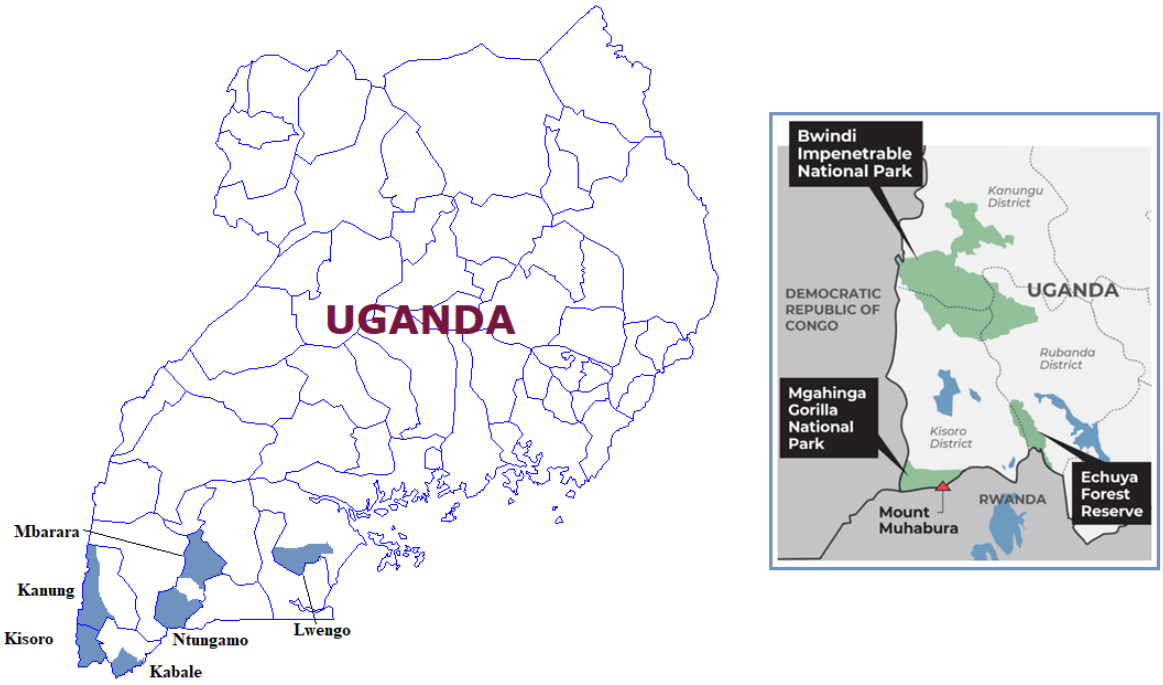
3.3. Case study 2: Indigenous Batwa community

The second case study is about the eviction of the Batwa indigenous group who have been almost entirely dispossessed of their ancestral land due to the creation of conservation areas in Uganda. The next sections will be subdivided as follows: firstly, an overview of the repeated human rights violation that the Batwa have faced from the colonial period to date will be provided; this historical background will be useful to understand the need for the Batwa people to form the United Organization for Batwa Development in Uganda (UOBDU), a national organization formed by the Batwa people to persist, adapt and transform in the face of all the injustice this community has been suffering from. Finally, to define the degree of resiliency of the Batwa and of the SESs they are part of, the six resilience enabling conditions will be analysed.

3.3.1. *The context*

The Batwa people were originally forest-dweller and hunter-gathers living in the forest's areas around Lake Kivu, at the border between Rwanda and the Democratic Republic of the Congo, and Lake Edward in the Great Lakes region of Central Africa. Today the Batwa can be found not only in Uganda but also in Burundi and in the neighbouring Rwanda and eastern Democratic Republic of Congo, reaching an "estimated total population of 86,000 to 112,000" (UOBDU, 2015, p. 7). However, according to some data by UOBDU, the majority of Batwa people living in Uganda is set in the south-west region reaching an approximate number of 3,135 Batwa (UOBDU, 2015). These live in Kisoro, Kanungu, Kabale, Mbarara, Ntungamo and Lwengo districts, but these have not always been their home. In fact, the Batwa communities, as well as other indigenous groups, were forcibly evicted from what lately became national forests declared by the Ugandan government; what were previously Batwa ancestral homes are now known as the Mgahinga National Park and the and Echuya Forest Reserve, established in 1991, and the Bwindi Impenetrable National Forest became a World Heritage site of endangered mountain gorillas in 1992. Figure 10 shows both the location of the forests, once Batwa's ancestral home and the districts in which the majority of them lives in Uganda. The total portion of land grabbed for these national parks is about 388.7 km^2 (UOBDU 2009). The transformation of such areas into state owned properties led to "the loss of access to land related common-pool resources for the more marginal local actors" (Haller, 2019, p. 9), thus the Batwa indigenous people.

Figure 10 - *Where the Batwa used to live and where the majority of them have been displaced to*



Note 14. The areas coloured in green, shown in the box on the right, are the locations where the Mgahinga National Park, the Echuya Forest Reserve and the Bwindi Impenetrable National Forest were declared by the Ugandan Government during the 1990's. This resulted in the eviction of the Batwa who settled in other districts, which are the coloured in blue areas in the map on the left; these are the districts where the majority of the Batwa people went after eviction from their ancestral lands, thus nowadays National Parks, and where they live today. The photo on the left was adapted from "Map of the districts of Uganda" by Rarelibra, 2006. CC Rarelibra at the Wikipedia project, 2020. (https://upload.wikimedia.org/wikipedia/commons/e/e0/Uganda_districts.png). The photo on the right was adapted from "Court Ruling Brings Hope to a Displaced People" by M. Haney, 2022. (https://globalpressjournal.com/africa/uganda/court-ruling-brings-hope-displaced-people/). Source: own elaboration.

However, the violation of land rights due to the establishment of these protected areas date back to the 1930s, when Uganda was under the British administration: in fact, in those years the traditional forested territories became conservation zones; this was another case of colonialism, in which the *modus operandi* of the governments in developing countries was to legitimize land grabbing activities in the name of sustainable development and conservation of natural areas**.** Beside this change under the British colonial rule, the Batwa people still considered such places as theirs, also because they could still access to resources and their lands. In fact, the violation

of Batwa land rights did not became totally evident until the 1990s, when the Ugandan government decided to establish the national parks that further contributed to the eviction of Batwa from the forests. This happened before the Constitution of Uganda and the National Environment Statute of 1995, and the Uganda Land Act (ULA) of 1998 were established. The constitution should have vested Batwa people with their customary rights over their ancestral land together with the ULA and the National Environment Statute, which were to protect these "customary interests in land and traditional uses of forests" (African International Christian Ministry [AICM], n.d., p. 5); nevertheless, according to the analysis made by law experts and reported in the *AICM submission to EMRIP of land rights of Batwa and Benet indigenous people of Uganda* "these laws also authorize the government to exclude human activities in any forest areas" with the aim of protecting the environment and biodiversity; this not only nullified the customary land rights of the Batwa indigenous People under the Constitution, but also left the majority of them landless and in extreme poverty conditions. In 2013, the government of Uganda published a revision of the National Land Policy with eight objectives; the most relevant for this case is the objective concerning the recognition of the loss of land rights faced by pastoral communities for the purpose of "conservation projects, mainly national parks and other government projects including government ranches" (p. 2). Despite this recognition, the government still remains the official regulator of the "public use of land in the interest of socio-economic welfare and development" meaning that all land concessions to foreign or national investors are legal though unjust (AICM, n.d., p. 4). Despite the legality at the base of land concessions for conservation projects among other purposes, human rights violation is undeniable as well as the violation of the principle of sanctity of property valid under the Constitution. These are potential legal elements that could make Batwa indigenous people to repossess or retain control over their ancestral homes but the dire situation in which the community is living, and the lack of education and acknowledgement of their rights, does not allow the Batwa to voice their rights.

3.3.2. *The Batwa indigenous group and UOBDU*

Despite being recognized by the international law as an indigenous group and for this reason vested of specific rights, the Batwa people are facing human rights violation, with consequential socio-political and economic injustice, at the national level. In 1991, at the time of parks creation, around 82% of Batwa were left landless while, in 2004, 44% of them were reported to not "even have a land on which to build a hut" **(**UOBDU, et.al, 2015, p. 9). Denying access

to their ancestral land led the Batwa to live on the edges of society in extreme poverty conditions, with most of them becoming squatters on other neighbouring districts and beggars. This made them victims of discrimination and prejudice, with none or little social and political representation, access to education or health services. These are some examples that partly explain the dire situation in which the Batwa people are living, rendering them more vulnerable and less resilient. This is a further example of the social impacts of land grabbing on the local communities, which are not able to prosper and use natural resources in a sustainable manner in the same way they were used to when living in the forests; in the past, the Batwa people lived in harmony with the natural environment and had full access to the forest's resources; this not only allowed them to feed and cure themselves through the use of herbal medicines they could find in the forest, but also to preserve the environment. Before land grabbing activities occurred, the SES, which the Batwa were part of, was certainly more sustainable than now. In fact, land grabbing activities did not occur only for the creation of conservation zones; instead, the land grabbed was also used for intense agricultural activities, which have stronger impacts on the environment if compared to the traditional practice of the Batwa. The current risk is that, continuing in this direction, human rights abuses will not stop, the environment will suffer and the whole social-ecological system is compromised.

Having said so, it is quite intuitive that due to all these reasons, several are the charity organizations, NGOs and church initiatives that have decided to help the Batwa throughout different activities in order to reduce, if not eliminate, the exposure of the Batwa to everyday issue. In order to help the Batwa to address land issues and develop sustainable alternative livelihoods, the United Organization for Batwa Development in Uganda (UOBDU) was funded in 2000 by the Batwa community. The UOBDU reports several NGOs, local parishes and donors in the region to help Batwa people inclusion in the community thus fostering their resilience. All these initiatives, when well-managed, are essential to foster Batwa people resilience while struggling to regain access to their ancestral lands. Not surprisingly, the UOBDU together with other NGOs and donors, have immediately organized to address three main aspects among others, these are the following: address chronic landlessness, improve Batwa incomes, training and schooling, and regain access to forests in national parks and elsewhere. All this with the consultation and approval of the Batwa communities. The next section explains how the Batwa people part of UOBDU have proven resilient in the face of all the challenges they have been exposed to.

3.3.3. *Resiliency analysis*

The Batwa people joining UOBDU not only are an example of resilient people fighting for their survival and respect of their rights, but they are also willing to build strong foundations for a better future. As done with the previous case, a thorough examination will be conducted throughout the analysis of the enabling conditions that can make the whole SES more resilient.

Collective action and cooperation

Before defining the level of cooperation and collective action among actors involved in UOBDU, it may be useful to understand how land grabbing activities changed the equilibrium of the SES of which the Batwa were part of before eviction, thus reducing its resiliency. Then it will be possible to explain the connections among the actors involved in UOBD as well as how the collaboration among members fosters resiliency.

First of all, social-ecological systems are dynamic realities and, for this reason, defining a unique SES would be misleading in this case; as previously mentioned land grabbing and the consequential eviction of the Batwa, forced these people to readapt and persist in different contexts, thus SESs. When the forest was inhabited by the Batwa, these were its main resource users, and animals and other species its resource units. When the government declared such areas protected, settler farming communities and logging companies imposed private land systems, evicting the Batwa and causing damages to the forest. It becomes clear that, from the 1990s onwards, the number of actors becoming part of the forest, which is the main resource system, varied and with it also the uses of the resource units within it. The governance system changed from being based on the communitarian rules of the Batwa, to the Ugandan government rule system, in which no place for the Batwa was granted. What further complicates things is the displacement of the Batwa communities into the neighboring districts, in which the Batwa became new actors. The Batwa "joined", or better, clashed with the districts dominant communities, who in turn were ruled by their local district councils, as well as their traditional system of rules. It is in these contexts that the Batwa were further marginalized and discriminated by the dominant communities of the districts. There are documents reporting cases in which the Batwa communities are considered to spread diseases, and, for this reason, they are not allowed to access dwells at the same time of the other communities. This not only is an obstacle for accessing water, that is the most vital resource, but is also an obstacle to cooperation and peaceful coexistence among different groups. The outcome is therefore a

conflictual one, undermining not only Batwa's resilience but also the one of the other communities and of the whole SES. This overview about the dynamics of social-ecological systems may be useful to understand that cooperation and collective action is lacking in the context of the national forest, from which the Batwa are excluded, as well as in the districts, where Batwa settled; not surprisingly, these situations are causing negative consequences from a social and human rights perspective.

It follows that the issue of cooperation and collective action are two essential elements that can render a system more resilient. These two elements, in fact, have been at the base of the creation, development and project implementation of the UOBDU. Being funded and composed by the members of the Batwa communities, UOBDU hinges on the cooperation and collective action of the Batwa. This is done to face their common issue of eviction and land dispossession. Apart from being part of their traditional communitarian spirit, cooperation is now the pivot of the UOBD and this can be seen under several aspects: first of all, the participation of the Batwa in the UOBDU is wide and sees men, women and youth cooperating to find solutions, give voice to their rights and, at the same time, improve their living conditions; another important strength point about the UOBDU is the collaboration and coordination among the Batwa members of the organization, the groups of Batwa households, other NGOs and donors involved. This collaboration is done through meetings, in which the Batwa people report their concerns and priorities while the other actors listen to them in order to shape a working plan that is coherent with the Batwa's needs. Training and health centers, animals and shelters, are all been provided to the Batwa after the consultation meetings. This proves that a functional collective action can take place only if most actors are involved; this is to avoid top-down approaches, as those used to establish the protected areas, that do not consider Batwa's priorities and rights.

However, despite UOBDU being recognized by the government as a national NGO, the recognition of the Batwa at the national level is still a work in progress. Nevertheless, having the Ugandan government ratified the Convention on Biological Diversity (CBD) on 8 September 1993, and having implemented it in respect of the Batwa people and the Bwindi, Mgahinga and Echuya national parks, obligations towards the Batwa communities should have been respected by the government. According to article 22 of the CBD (2004), the government should have established, managed and planned the activities on the protected areas "with the full and effective participation of, and full respect for the rights of, indigenous and local communities consistent with national law and applicable international obligations" (CBD,

2004, as cited in Forest Peoples Project [FPP] et al., 2008, p. 2). This, according to the "Review of Uganda's Implementation of the CBD Programme of Work on Protected Areas" provided by the FPP, UOBDU and CARE (2008), did not occur; on the contrary, activities in the protected areas of Bwindi, Mgahinga national parks and Echuya forest reserve, continued to be "managed and administered with a top-down approach by the Uganda Wildlife Authority (UWA) and National Forestry Authority (NFA) respectively without any meaningful participation by the indigenous Batwa" (FPP, 2008, p. 3). In addition, the Batwa access to these protected areas from the 1990s onwards, dramatically reduced. Unfortunately, at date, not much has changed for the Batwa, who are still waiting for the government recognition of their rights.

To conclude, it is important to define the degree of cooperation and collective action, as a starting points for possible recommendations, that may be provided. In order to allow a full cooperation, that embraces both "top", "bottom" actors, mediators are great contributors. However, what is of vital importance is that full recognition of the Batwa is granted by the government, otherwise coordination and a functional collective action is highly unlikely to occur between the community members and the government. Until the Batwa are not recognized, they will continue to suffer from human rights violation and discrimination. The Karimojong, which are recognized by the Ugandan government as pastorals, are the proof that a formal recognition can strengthen cooperation and foster development programmes that are win-win solutions for both the government and these communities. The government should do the same for the Batwa or at least include them in those activities in which they are strong: community collective action is certainly a key feature of the Batwa that the government should treasure.

Clear system of rules

Before eviction the Batwa were organizing their lives throughout traditional rules in which family members had their specific roles, obligations and duties towards their family and the whole community. This helped them to manage daily risks to which they were exposed in the forests, such as environmental conditions and diseases, to mention but a few. Now that the Batwa are spread in different districts and some mixed with other communities, their traditional system of rules has been challenged. However, the Batwa still organize themselves and their daily lives elsewhere; in addition, a system of rules does not have to be necessarily a formal one: rules and norms are efficient not only because they are clearly written, what is important,

is that these are accepted by the community for which the rules are set. This is the case of UOBDU, in which consultative meetings are the main way through which the Batwa members and other donors interact and define their priorities, roles and duties. These meeting are fixed and usually conducted as follows: first of all, the day and location of the meeting is agreed between UOBDU and the household members according to their availability; when the day of the meeting arrives, UOBDU representatives visit the districts, in which the Batwa communities have settled; the sound of the drum announces the beginning of the meeting so the consultation among the participants starts. In these meetings participants usually discuss about the issues, constrains faced by the community and possible solutions to adapt. This provides UOBDU with a clear profile of the situations experienced by the local people, allowing the organization to present a work plan coherent with the needs of the Batwa. Once the working plan is ready, UOBDU presents it to NGOs and donors so that they can understand how to better support the Batwa.

To better understand the functionality of these meetings, it may be useful to report some priorities reported by the staff after the first meeting with the communities was held; these were mainly those connected to *land and housing*, *education and adult literacy*, *income generation* and *forest access and conservation benefit sharing*. Knowing these priorities in essential in order to know what to do, and who, among the actors involved, has the capacity to do something to help the Batwa. In fact, after having identified the issues, roles can be given among actors: for example, some Batwa groups expressed the "need to have some representatives from the districts to work in the Kisoro office" (UOBDU, 2004, p. 12). Another group brought forward a proposal concerning the possibility of being involved in national parks as tourist guides. This was a strategic way to include the Batwa in the programme for the implementation of the Convention on Biological Diversity, thus being a win-win solution for both the government and the Batwa: the former, would have fulfilled its obligation to involve indigenous and local communities in the management of the protected areas, while benefitting from the knowledge the Batwa people have about what once were their homelands; the latter, would have benefited from such employment by earning an income and improve their inclusion in the society. In fact, a formal agreement between the Uganda Wildlife Authority and UOBDU was signed allowing some Batwa people to be employed as guide tourists in the tourism project at Garama Cave, all under the management of the UOBDU. Unfortunately, this agreement was terminated by the Ugandan Wildlife Authority after Batwa representatives and UOBDU filed a petition before

the Constitutional Court of Uganda against the Ugandan Wildlife Authority, the National Forest Authority and the Attorney General; the petition asked the Court "to provide an interpretation international law and the application of international and regional principles and standards pertaining to indigenous peoples' rights" given the repeated human rights violations (UOBDU et. al, 2015, p. 11). Despite this outcome, the meetings have proved effective in fostering dialogue and cooperation at different levels.

However, even if formal rules are not explicitly set, these meetings are structured in such a way that they simplify the identification and collection of the main issues faced by the communities as well as the more appropriate activities for the Batwa, they enhance dialogue and cooperation among the members, who know exactly their role. Therefore, these meetings provide the UOBDU with an implicit system of rules defining NGOs and donors' duties, such as the responsibility of consulting the Batwa before any project begins and the transparent and accountable way to manage development funds; more specifically, a specific committee, whose members are chosen by the UOBDU at the district level, oversees funds management. Instead, the government, apart from recognizing the UOBDU as a national NGO, it has not done much to ensure rights, duties and rules for the Batwa. It becomes clear that, until the national law does not conform with the international, it will be difficult that Batwa rights are respected nationally.

At this point, it becomes clear that a clear system of rules is not defined for the Batwa people at the national level and the only way of ensuring this would be that the government recognises Batwa people as a minority group. In this way the Batwa can have a role within the society, lift themselves from poverty, earn an income and benefit the whole society. In addition, discrimination and exclusion would be considered illegitimate and conflicts that are occurring among different groups could be alleviated so the whole social network can benefit from this. Fortunately, meetings are held at the district level under UOBDU, sign that the Batwa and their supporters have been struggling to consolidate their representation to the government; in addition, the petition brought at the international level is a strong sign of Batwa willingness to have a role and voice in Uganda. It is decades that the Batwa people are struggling to achieve such goals; this proves their capability to persist in the face of the eviction and adapt to new circumstances.

Efficient monitoring mechanism

Monitoring a system is about detecting errors and finding solutions, this is exactly on what UOBDU focuses on during the meetings. What is suggested from the way these dialogues are structured is a wide net shaped by the interactions across different levels. This implicitly means that, once a community member decides to participate to a meeting, thus gets involved in the projects developed afterwards, this person becomes part of a wider social network. This triggers a mechanism that, not only fosters participation, but also builds a sense of community that results in a participatory behaviour. In addition, a monitoring mechanism is about detecting people or organizations that can negatively affect the synergy among members; in fact, meetings are based on direct participation of the UOBDU staff and the Batwa at the household level: by doing so, issues at the local level are easier to monitor, functional solutions can be suggested so that the community member feel their issues are taken into consideration, and trust among actors is built. This results in a mechanism of reciprocal giving and receiving that shapes the interactions between the Batwa at the household level and the members of UOBDU: this mechanism is by itself a way of monitoring the whole system. A further monitoring mechanism can be glanced at the UOBDU financial level. More specifically, to monitor both entrance and responsible and transparent use of funds, a committee has been set at the district level. This committee is composed of district representatives participating in UOBDU, "a chairman, a treasure and a secretary" (UOBDU, 2004, p.28). This not only controls that money is efficiently used but it also monitors the actors' behaviour and duty compliance.

At the governmental level, the Batwa community lacks of recognition and for this reason they are lifted from both duties and honors: a glaring example is the tax exemption (UOBDU, et al., 2015). On the one hand, this may be considered to lift a burden from a community that does not even have enough money to provide their family with a daily meal; on the other hand, tax exemption is the sign that the Batwa are marginalized politically and socially. Consequence of this and of the poverty conditions they are living in, Batwa are reported to be "demotivated as a group and seem to be resigned to their situation" (UOBDU, et al., 2015, p. 10).

To sum up, the monitoring of rules at the community level is conducted by the Batwa members of the UOBDU and the Batwa people themselves. Given the dire situation regarding the lack of recognition, now the most important thing to do is avoid further violations of Batwa's human rights to occur. The UOBDU, charity and church organizations among others are fighting for

Batwa's rights to be recognized, granted and, most importantly, respected at the national level. At the moment, this is probably the more functional monitoring mechanism that can help building more resiliency.

Polycentricity

Fortunately, from the moment UOBDU was established by the Batwa community members, the connections between an organization and the civil society were created and formally recognized by the government. It is clear that, interactions among the NGO and the local people contribute to raise the degree of polycentricity and its functionality in strengthening a more resilient system. In fact, from the first stages of the programme to help the Batwa community, the first concern of UOBDU and its staff was to establish a coherent and common line that NGOs and donors must follow to build an efficient aid programme. This means that dialogue was necessary among the various actors involved and, more importantly, that communities' priorities were to be clear in the minds of all staff members. This last requirement is pivotal for two main reasons: firstly, to avoid what happened with land grabbing activities, which were undertaken with little or no previous community consultation; secondly, understanding the priorities and necessities of a community is basis for a functional establishment of aid projects. Also in this case, the institutional resilience framework is a useful theoretical and practical basis for establishing projects that aim at increasing the capacity of the Batwa to persist and adapt by providing "the tools for social cooperation that allow for quick and effective response" to current and future changes (Aligica & Tarko, 2014, p.56). The commitment of donors and NGOs to act in line with the Batwa community needs and priorities has concretized through the meetings conducted at a household basis and the involvement of the Batwa in the projects; this proves that a polycentric system is useful when trying to foster development programmes.

However, as far as the government is concerned, the interactions with the "top" levels are not that consolidated. Despite some events in which the government allows some community members to access the reserves, thus being involved in that specific system of rules, generally the relation between government and the Batwa is of exclusion of the latter by the former. Fortunately, there is the recognition of the UOBDU at the national level. The UOBDU in fact has a mandate to help the Batwa people to prosper and this profits the government as well. The formal recognition at least allows some exchanges of information and dialogue to occur

between the UOBDU and the government. However, the government degree of interaction in the polycentric system cannot be defined as high.

It results from this analysis that the degree of polycentricity, meaning the interaction among the national government, nongovernmental organizations and the local communities, is not as high as in the case of Etamam. This is especially true when considering the interactions between the government and the Batwa people; more interaction can be seen between the government and the UOBDU organization but given the issues regarding human rights their relation is unstable. Fortunately, polycentricity is working at the UOBDU level given the efficient interactions among its members and external collaborators and the outcomes of such interactions are positive.

Informed society

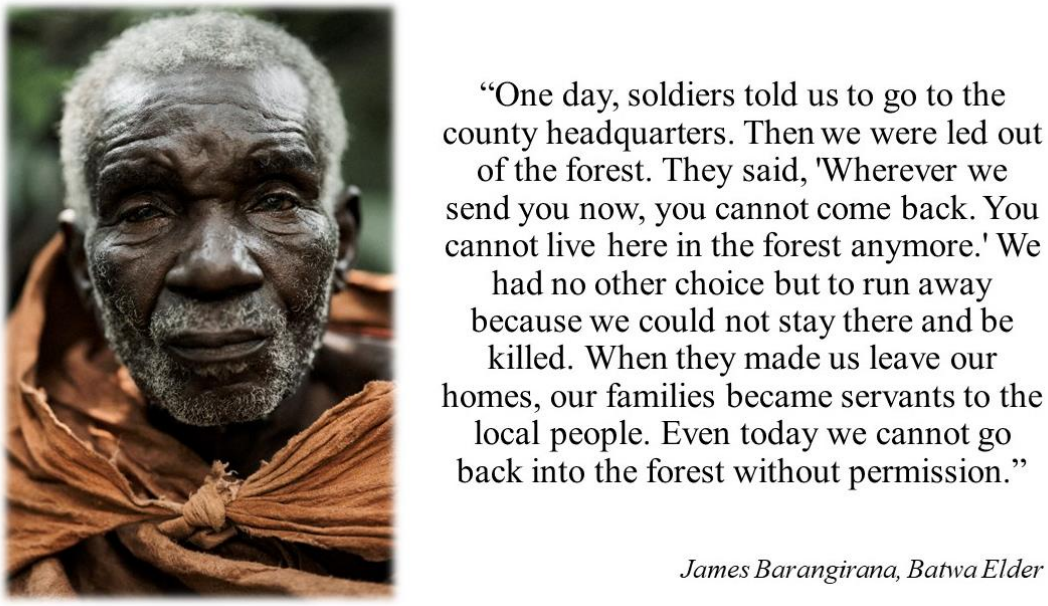
Limiting the opportunities for the Batwa is the spread illiteracy among them. This was considered to a be a problem already in 2008 when *the Review of Uganda's implementation of the CBD Programme of work on protected areas* was published by the Forest People Programme (FPP). In this review, the UOBDU and its collaborators highlighted how illiteracy was an obstacle for the Batwa; as a matter of fact, not knowing their rights, the Batwa are not able to exploit some opportunities that are actually granted by national acts such as the Wildlife Act, according to which "communities enjoy certain property rights and may carry out activities provided" and that do not harm the environment (FPP, 2009, p.6). If the Batwa knew about this Act more of them could have conducted activities such as farming and hunting in the protected areas. Again, the problem of lack of information was reported by the UOBDU and other organizations (2015) in the report *A review of the human rights situation of the Batwa, the Benet people and pastoralist communities*, meaning that the problem still persisted despite the efforts of the UOBDU and its collaborators to spread education among community members. In this report, the UOBDU and its collaborators also highlighted the connection between discrimination and lack of information, this means that, if the Batwa continue to be isolated from the rest of Ugandan society it is highly likely that they will continue to remain unaware of their rights, thus will not benefit from the opportunities for them available. For this reason, the UOBDU has been struggling to provide information through education and training centres; NGOs, thanks to donations, have provided schools for children, training centres for men and women, who expressively asked for this. This is proof that the Batwa are not a backward

society, they want to gain access to information and know the advantages of being well-informed and well-trained. Having a voice in the socio-political context is considered fundamental for the Batwa; in fact, since the very foundation of UOBDU, the organization wanted to provide the Batwa with the information concerning their rights; this was done throughout training centres that were appreciated by the Batwa, who wanted "such training to be continuous" (UOBDU, 2004, p.14). The Batwa people are therefore determined to collaborate with their organization and contributors to allow most of the Batwa women, men and children to access schools and training centres. If it weren't for the organization and the determination of the Batwa communities, the literacy level would be even lower. This because the Batwa are excluded by nearly all the social activities provided by the government; in addition, when the Batwa could access to some of the government activities, many Batwa people are not aware of such possibilities.

Access to basic services and resources

When the Batwa were living in the forests, resources such as water, herbal medicines and food was collected by the community members. This provided them with a sufficient calorie intake and basic health conditions. When they were evicted from their lands, access to basic resources became almost impossible. Many of the Batwa became beggars, the more fortunate embraced agricultural activities in nearby farms providing them with the essential income to survive. In Figure 11, a photograph of a Batwa Elder, James Barangirana, is shown together with his testimony about how he was forced to leave the forest and how the access there is still compromised today.

Figure 11 - James Barangirana, a Batwa Elder testimony



Note 15. Adapted from "The Batwa" by The Kellerman Foundation. (https://www.kellermannfoundation.org/the-batwa).

It is not a surprise that in the first meetings held by the Batwa members of UOBDU, the common and main priorities cited by all groups were the *access to land* and the increase their *access to the forests*. It is of common knowledge that indigenous groups and pastorals live thanks to their land and it resources. Access to resources, such as fertile land, allows people to produce their own food and sell the surplus in local markets, which in turn will provide them with an income. Incomes are needed for accessing services such as hospitals and schools. Improvements from a social perspective can also result from the Batwa accessing to land and resources: for example, secure incomes, clean houses and an overall improvement of the living conditions of the Batwa more generally, are ways to eliminate the social stigma the dominant communities gave to the Batwa once they moved to other districts. In fact, the Batwa have been considered dirty and ill people to be kept distant, but this is more likely to change if the Batwa are granted access to basic resources and services.

What makes things worse are cases of physical harm to the Batwa people such as the fire lit throughout Batwa villages by neighbouring ethnic groups. This is a sign that the social relations with the other groups are continuously compromised by the ongoing discrimination. The

government is not doing much in avoiding such problems and the Batwa continue to suffer from discrimination, isolation and physical harm. However, along the years, the Batwa proved to be strong and resilient when dealing all these challenges. Through UOBDU, they are collaborating with donors, who in turn provide them with basic structures and resources; the Batwa are also embracing casual labours that differ from the daily activities they did in the forests: this is proof that the Batwa are resilient, notwithstanding the dire conditions they are living in.

Following the Working Group II's contribution in the IPCC's *Sixth Assessment Report*, released on February 28, 2022, it is reported that inequality, poverty, weak governance and limited access to basic services and resources, are all challenges that render some specific groups even more vulnerable than they already are; the Working Group II specifically refer to the compromised capacity of *ethnic minorities*, *informal settlements*, *low-income households*, and *Indigenous Peoples* (WGII, 2022, p. 28) to adapt. This means that the capacity of the Batwa to adapt to climatic changes becomes lower making them more vulnerable to external and internal pressures. All this, together with land grabbing activities that are exploiting land, causing loss of biodiversity, is leading to ecosystem loss and amplifying people's vulnerability. The impacts of both land grabbing and climate change are obstacles for families to work on the land, undertaking agricultural activities among others: this results in a lower labour productivity, thus lower income for the Batwa. Fortunately, the assessment report also provides some adaptation approaches that are likely to improve the ability to adapt, thus become more resilience. Some of these approaches include social programmes fostering equity and justice, which is exactly what UOBDU is working since its creation by improving the access to services and resources such as water, healthcare, sanitation and education. In the light of such findings, it become even more clear the need for cooperation of government in tackling all these issues.

3.3.4. *Conclusions*

All things considered, the Batwa people are continuously experiencing human rights violations which is impeding them to have access to services and vital resources. However, since the creation of the UOBDU, the Batwa have proven strong, united and willing to overcome external and internal obstacles. The main obstacles that have been analysed are connected to both the environmental and socio-political spheres. A glaring example is access to land, more specifically, their ancestral land, which are now national parks and tourist attractions. For this reason, the Batwa, the UOBDU and other international organizations, are fighting for the

recognition of the Batwa land rights at the national level. A further example is the lack of education, which is ranked by the many Batwa as a reason of backwardness impeding the spread of information as well as its full comprehension. These obstacles are certainly undermining the capacity of the Batwa to conduct a decent life and afford their children to go to school. Despite all this, the Batwa are adjusting to this reality and fighting to give voice to their rights. They proved to be willing to engage new casual labours, totally different from those they were used to when living in the forest. All these aspects are a sign that the Batwa are resilient in spite of the socio-ecological challenges they are facing.

3.4. Case study 3: Palm oil plantation

Usually, national development projects' aim is to foster economic and social development in a country; nevertheless, the activities undertaken under such projects do cause some social and environmental damages that can undermine the resilience of some community members and the environment where such activities take place. This last study case is one of the several examples of national development projects undertaken in developing countries that, despite having good intentions, can also lead to undesirable outcomes. For this reason, this third case is slightly different from the previous two analysed: if the previous cases specifically dealt with pastoral and indigenous communities' initiatives aiming at maintaining traditional practices, livelihoods and protect their rights when land grabbing activities occur, this last case will be analysed from a different perspective. In fact, the case is about a governmental initiative to foster development in the country by investing in agriculture, that is the principal source of income of Ugandan people. More specifically, this development project focuses of the establishment of palm oil plantations and its production chain to lift the economy of the region, thus the income of the Ugandan people involved in the production of this vegetable oil. However, establishing fields also means violating people rights to land and basic services and compromising traditional livelihoods. This section will try to encompass both positive and negative consequences of the national development project and how these impacted on Ugandan communities' resilience.

3.4.1. *The context of palm oil industry: when a global trend becomes a national development project*

The growing use, thus demand of vegetable oils has increased worldwide especially due to the rising human consumption and promotion of agrofuels. The focus here is on palm oil which is one of the most consumed edible oils in the world together with soybean oil, canola oil and sunflower seed oil (Shahbandeh, 2022). Used for edible and personal care products, as well as feedstock for biofuels, oil palm production is shared among industrial sectors as follows: 72% for the food industry, 18% for the personal care and cleaning products industry, and finally a 10% goes for the biofuel industry (Voora, Larrea, et. al., 2019); this data is from 2019 when the production volume of palm oil in the world was around 72.94 million metric tons. In 2021/2022 the volume of the global production has increased up to 75.5 million metric tons and this is prospected to expand in the next decade. According to some data of the World Bank, palm oil

average price is expected to rise from 752 nominal U.S. dollars per metric ton in 2020, to about 1,009 nominal U.S. dollars per metric ton by 2025 (Shahbandeh, 2022). Having said so, it is not a surprise that this growing market have pushed companies to buy portions of land for the establishment of industrial monocultures: according to *Analytical Report III* by Land Matrix, "oil-palm related large-scale land acquisition accounts for more than 20% of the area currently cultivated with this crop worldwide"; in comparison, rubber and sugar beet shares 10% of the area cultivated worldwide, sugar cane 5%, while "maize, rice, or wheat" are estimated to account for less than 1% of the globally cultivated area (2021). This to have a better understanding of the portion of land oil palm is occupying in the global market and the potential land grabbed to small holders, farmers and families, for the development of this industry.

Turning to the leading palm oil producers, these are mainly located in Asia, Africa and Latin America (Shahbandeh, 2022). However, the focus of this work is on Africa more specifically on Uganda, where the oil palm production has spurred from the mid-1990s onwards. In those years, the government of Uganda was willing to increase the domestic production of palm oil as part of a national development project aiming at turning the country into "a lower middle-income country by 2021, with a per capita income of US$1,026, and upper middle-income country by 2040, with a per capita income of US$7,500" (Ssemmanda & Opinge, 2018, p. 8). This was to be done with the collaboration among national, international and local actors, such as the World Bank and its agencies, private industries and other countries: a widely used *modus operandi* of developing countries when these undertake the road towards "development". As a matter of fact, around 85% of Uganda's population lives in rural areas and depends on agriculture for its livelihood; for this reason, investing in agribusiness means investing on the backbone of Uganda's economy. This has attracted many investors to collaborate with the Ugandan government to finance projects that often and willing have translated into land grabbing activities. Among other national development projects, Ugandan government launched the Vegetable Oil Development Project (VODP) funded at the international level by the International Fund for Agricultural Development (IFAD), an international financial institution and specialized agency of the United Nations. This project was approved in April 1997 in accordance with the Ugandan Government. The goals of VODP were to "address rural poverty by involving smallholder farmers in oil crop production, improve the health of the population through increased intake of vegetable oil, achieve food security, and to promote export diversification and import substitution by increasing domestic vegetable oil production"

(IFAD, 2010). Actually, VODP became one of the biggest development projects in Uganda bringing new investors in the country: these started to cooperate with various actors at different levels: private, national and local sectors have been involved in this project. This strategy of collaboration at different levels is an important institutional mechanism to create a stronger network, increase competitiveness, create more job opportunities and mitigate the risks that can be faced in the agribusiness.

Obviously, if international donors, funders and organizations collaborate in these development projects, this means these have interests in doing so. On the one hand, the government wants to address the "fragile and unattractive business nature of the agriculture sector" (Twinamatsiko, 2013); on the other hand, investors are eager to collaborate with a country where big portions of fertile land are available. Moreover, land and water are increasingly threatened by climate change, translating into food insecurity. To ensure the global demand of food and energy, investments on land increase and this occurs especially in zones where water is available, as in the case of the southern part of Uganda where Lake Victoria is located. This is exactly the strategy adopted by the Ugandan government and its partners when they decided to install palm oil plantations in Uganda to meet the increasing national and global demand. Implemented by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) in 1998, the Vegetable Oil Development Project entered three phases, namely phase one (VODP I), phase two (VODP II) and the National Oil Palm Project (NOP). The first phase, VODP I, started in 2002, was completed on 31st December 2011 and closed on 30th June 2012. The first plantations and units to be developed during VODP I were 10,000 ha on Bugala Island on Lake Victoria. Due to various delays caused by insufficient funds, the planting of palm oil trees only began in 2006. From this year onwards, the plantations continued to grow hand in hand with the increasing national and global demand of palm oil. In 2010, the second phase (VODP II) was implemented by the Ugandan government to expand domestic production of palm oil seeds and other vegetable oil seeds. To do so, this second project continued to expand the oil palm scheme in Bugala Island and developed a similar scheme in Buvuma Island in Lake Victoria: the production focused particularly on palm oil production. However, the two islands were only a part of VODP grand design: "oilseeds development were to cover four hubs of the north and eastern region covering 43 districts" (IFAD, 2020, p.1). To have a clearer idea of the extension and areas covered by the Palm Oil Project, a map has been reported below in Figure 12.

Figure 12 - *Districts under the Vegetable Oil Development Project II (VODP II)*

Note 16. The areas coloured in yellow show the extension of the project area under VODP II. From "Vegetable Oil Development Project 2: Project Completion Report," by IFAD, 2020, International Food and Agriculture Development. Copyright 2020 by IFAD. (https://www.ifad.org/documents/38711624/40330956/Uganda+1100001468+VODP+2+Project+Completion+Report.pdf/049a1f2d-abfd-d577-7bbf-638e8dd511d0?t=1603204296000).

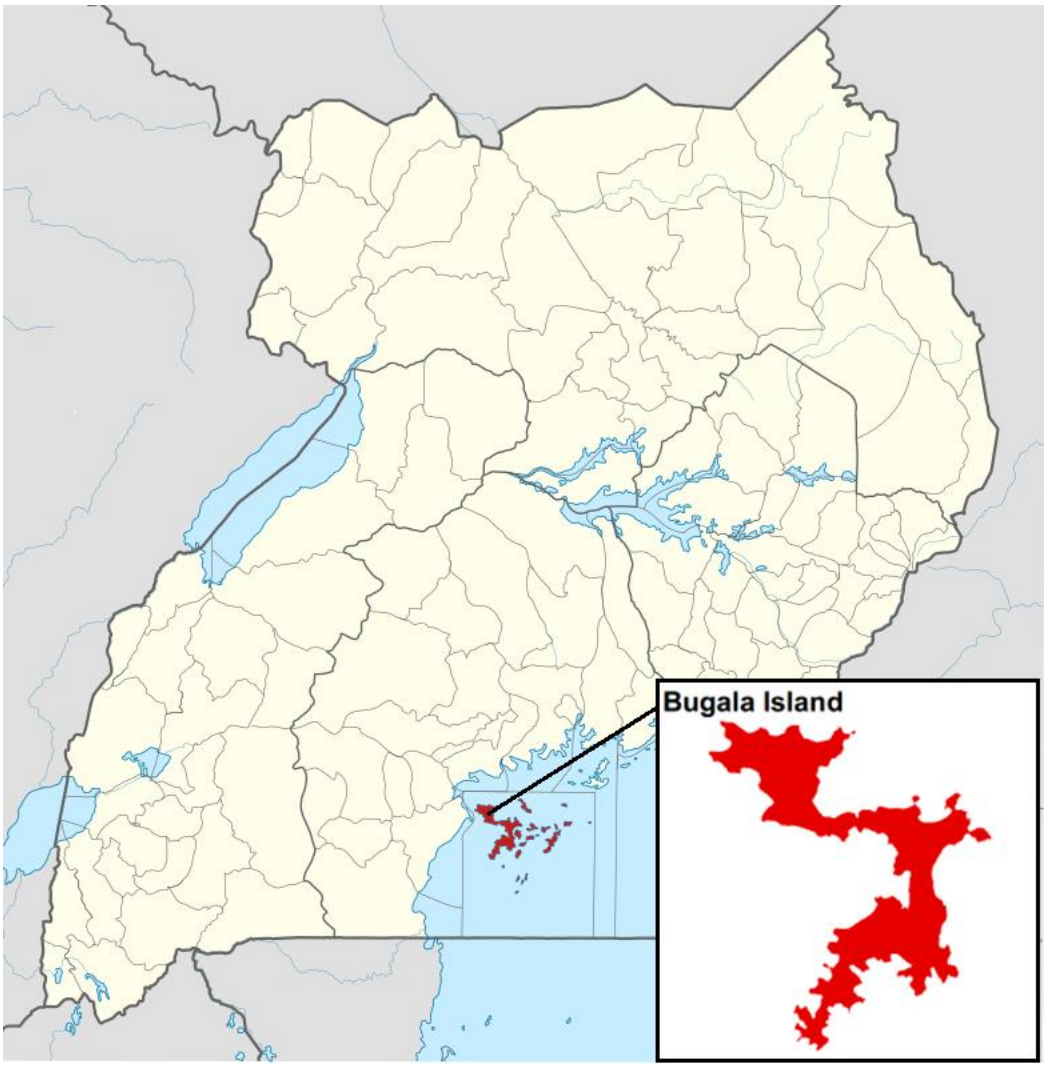
The last phase, at least up until now, is the National Oil Palm Project (NOP): this is a 10-year project started in January 2019 "designated to consolidate investments undertaken under VOPD I and II" to support smallholders and communities (Ssemmenda & Opinge, 2019, p. 6); the hubs identified for the implementation of NOP have been Buvuma island, Mayuge, and Masaka/Raka (Ssemmenda & Opinge, 2019, p. 12).

Despite executive summaries reporting the benefits of this project such as the improvement of livelihoods and rising national income, several controversial aspects, such as deforestation and land dispossession, cannot be omitted. In an article about land grabbing in Uganda, published in an online news platform called *Slow Food* in July 2020, reference is made to the consequences of the project over the districts of Kalangala and Buvuma, more specifically in the islands under such districts, that are Bugala and Buvuma Island respectively: in these districts, not only 10.000 hectares of land were deforested to establish palm oil plantations, but also around 20.000 people are reported to have lost their homes (Thomas, 2020). In fact, the initial idea at the base of VODP to increase domestic production of vegetable oil, while addressing poverty in the region, has encountered some obstacles, leading to negative impacts on both the environment and the community. Historically, there are examples of development projects in Latin America, Asia and other African countries whose grand design was to spur the county's economy first, and social benefits were supposed to come as a consequence of the improvement in the wellbeing. However, history teaches that this does not always occur, or at least not systematically. For this reason, the following section focus on the project implementation on Bugala Island.

3.3.2. Palm oil in Bugala Island

This section will deal specifically with the public-private agreement between BIDCO Uganda Ltd (BIDCO) and the VODP for the installation of palm oil plantation and refineries in Uganda, more specifically in Bugala Island in Kalangala district. The district of Kalangala include 84 islands, also known as the Ssese Islands located in the northwestern part of Lake Victoria. These islands all together cover an area of 468 km^2. Of the 84 Ssese Islands, 63 are inhabited and the main island under the Kalangala district is called Bugala. Figure 13 shows the location of Bugala Island.

Figure 13 - *Map of Bugala Island in Kalangala district*

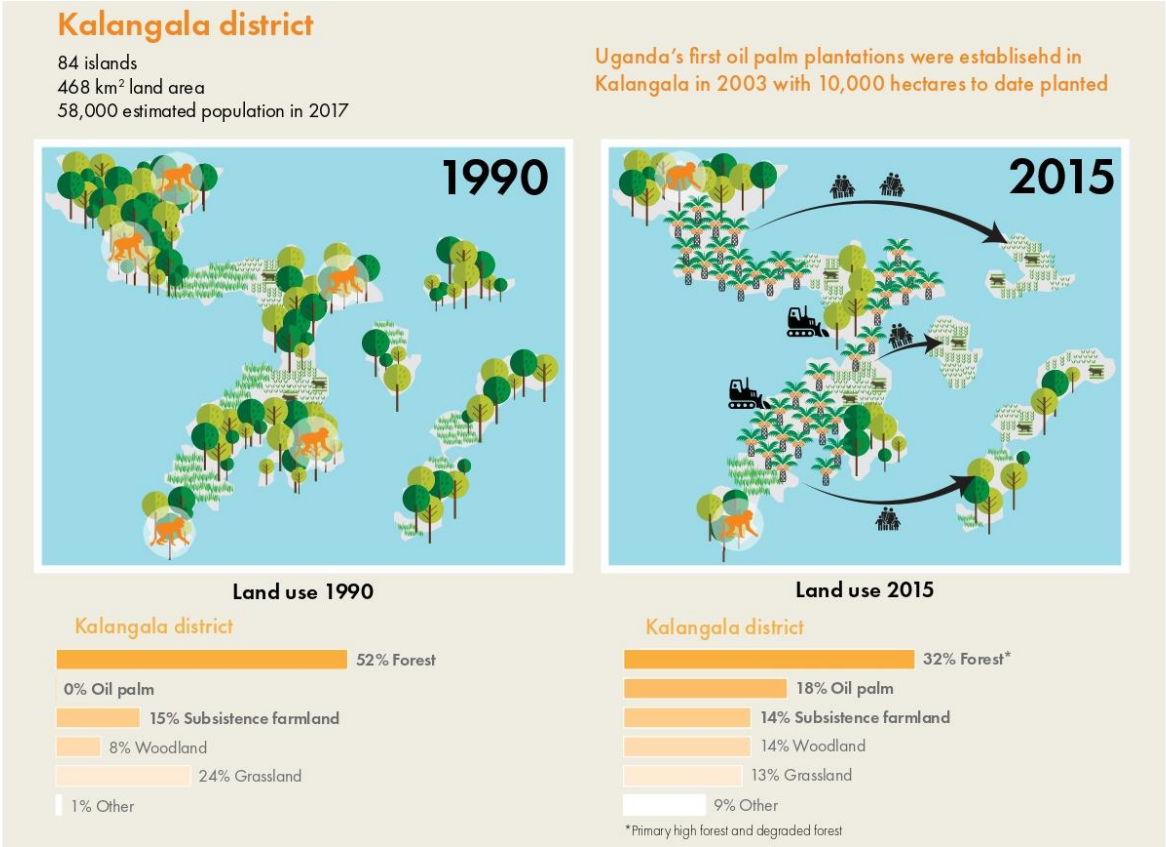


Note 17. Figure 11 shows the group of islands under the Kalangala district that are also called Ssese Islands. The biggest island is called Bugala, which has been zoomed in the black box. Adapted from "Kalangala district" by Wikipedia. © OpenStreetMap contributors, 2017. Adapted from "Oil palm plantations in forest landscapes: impacts, aspirations and ways forward in Uganda" by M. Timbuka. (https://www.tropenbos.org/resources/publications/an+assessment+of+the+impacts+of+oil+palm+in+kalangala+and+buvuma).

The climate in this region is tropical and generally humid, given the proximity to the equator; temperature is usually around 27 and 30°C with with "a mean minimum generally not lower than 18˚C" (Ssemmanda & Opinge, 2018, p. 7). This mite climate, together with annual rainfall around 2200 mm, allowed the island to be rich in biodiversity; rich biodiversity was detected at least up until deforestation started to occur in Bugala territory already during the mid-1990s, when the Government of Uganda implemented VODP to foster development in the country. In

those years portions of land in Bugala island had been deforested for agriculture hitting mainly forests and grassland. Commercial oil palm growing was introduced in the mid-2000s during the first phase of VODP (2002-2012) when "the government provided leasehold land free from encumbrances for the nucleus estate for a 99-year period (with renewal options)" (Ssemmanda & Opinge, 2018, p.8). During this first phase, 10,000 ha were developed on Bugala Island; consequently, when the second phase started in 2010, the plan scheme in Kalangala district - including Bugala Island - was expected to expand; in Figure 14 a comparison between the use of land in 1990 and the one in 2015 is shown to have a better understanding of the changes in land use due to the establishment of these plantations, which, in 2017, were covering more than a third of Bugala island.

Figure 14 - *Comparison in land use before the project started and in 2015*



Note 18. The figure on the left shows the land cover of the Ssese Islands in 1990: while the map of the right shows the land use in 2015. Palm oil plantations are depicted by small palm trees. From "Oil palm plantations in forest landscapes: Impacts, aspirations and ways forward in Uganda," by R. Ssemmanda, M. Opinge, 2018, p. 12. Copyright 2018 by Tropenbos International. (https://www.tropenbos.org/resources/publications/an+assessment+of+the+impacts+of+oil+palm+in+kalangala+and+buvuma).

Before the introduction of the plantations, the main economic activities in Kalangala district were fishing, followed by "subsistence agriculture, livestock farming, logging and charcoal making" (Ssemmanda & Opinge, 2018, p. 7). Certainly, the introduction of palm oil plantations has created new job opportunities in the district improving the living conditions of many inhabitants; nevertheless, these improvements were not shared equally among the community members and, there is evidence suggesting that these did not occur without negative social and environmental impacts: on the contrary, since the verry begging of VODP 3,500 ha of former public land was given by the Kalangala district local government for commercial oil palm growing, this negatively affected the locals who were living on such portions of land (Ssemmanda & Opinge, 2018). Some landowners, who were owning the land under mailo tenure system, sold their land for the project and were actually compensated but this was not the case for all the tenants depending on such portions of land for livelihood. This resulted in land dispossession with no prior consultation, no compensation nor resettlement. Similarly to what happened to the Batwa, and to the majority of evicted people hit by land grabbing more broadly, Bugala inhabitants had to readapt and reinvent themselves.

Despite the social injustices experienced since VODP was established, the project continued leading to land exploitation; in fact, the zones located in the Lake Victoria basin are those suffering more from land exploitation and degradation. This, according to *Uganda Country Report* prepared by the Land Degradation Neutrality Target Setting Programme, is due to the high population density of 180 per km^2 which demands for charcoal, firewood and construction timber (Aijuka, J., Akidi,, 2018). However, the increase in population was registered to have occurred since the establishment of the plantations: on the one hand, the plantations did benefit local people by providing them with new jobs in the plantations, providing them with an income thus improving their living conditions; on the other hand, evidence suggests that the majority of people working in the plantations are migrants who arrived in the island specifically for this reason, while many locals continue to undertake historical activities such as farming among others.

To conclude, this was an overview of how the introduction of palm oil occurred in Uganda, more specifically on Bugala Island of the Kalangala district. This was to provide the reader with some background information to better follow the analysis of the enabling resilience conditions.

3.4.2. *Resiliency analysis*

The Ugandan Government and its funders started the oil palm projects with the main aim of investing in the agricultural sector to raise the national economy; however, it may be clarified the degree up to which the oil palm project has fostered or hindered resilience. For this reason, as done with the previous cases, the six enabling resilience conditions will be applied to this last case and analysed.

Collective action and cooperation

The main impacts of land grabbing activities led under the VODP were presented in the previous section to show how the introduction of palm oil in Bugala reshaped the SES. In fact, before VODP was established, farmers, fishers and smallholders were the main actors and resource users of the resource systems, which had characterized the island's landscape: these were especially forests, the lake, grazing and green land. The actors involved shared the resource units such as trees for wood, fishes, animals and crops, which were mainly used for subsistence or for sale in local markets. The whole SES was therefore self-organized and the land tenure system under mailo owners was locally arranged as follows: mailo landowners possessed portions of land, which were in turn tilled by other land tenants. This is an example of private bargain that appeared to work in this specific context. However, it is important to remember that this system was a residue of colonial times, when mailo land tenure system was introduced by the British during the colonial period; the fact that this still exists is also proof of the capacity of local people to persist and adapt to a governance system of land introduced by external actors.

However, since VODP was introduced in the 1990's, collective action and cooperation among locals, especially those working on land, has been affected. Apart from some mailo landowners and stakeholders who had sold their land for the establishment of palm oil plantations and have been compensated for this, other land users have been dispossessed from their land, which passed under a new governance system controlled by the VODP and its partners: several were the cases of disputes between VODP partners and landowners reported as a consequence of such changes. However, it is also true that locals have been integrated in VODP and targeted to participate since the first phase of the project. As a matter of fact, the Ugandan government wanted to establish these plantations also as a way to create a source of income for locals. The project was established also to foster collective action and cooperation among VODP partners

and smallholders: in this regard, it has been reported that, when the government and its partners signed an agreement, this stipulated that 800 smallholders were to participate in the project (Ssemmanda & Opinge, 2018). From this perspective, VODP is an example of cooperation among private and public enterprises and services providers, whose aim is to foster the economy of the region; to achieve such target, collaboration among locals was actually enhanced. Nevertheless, this collaboration only interested a part of local people while many others have been negatively affected or excluded: just to provide an example, 80% of landlords in Kalangala were reported to have been forced to sell their land for the project: this is certainly not a way to include locals (SSemmanda & Opige, 2019). Perhaps, it is also for these conflictual outcomes that Kalangala Oil Palm Growers Association (KOPGA) was formed in 2007. KOPGA was conceived as a separate organization that promoted the interests of farmers. More specifically, before the formation of KOPGA, the government had already established the Kalangala Oil Palm Growers Trust (KOPGT); however, the local farmers decided to create a separate organization called Kalangala Oil Palm Growers Association (KOPGA), which in 2017 reached "1,800 smallholders, including 600 women" (Francesconi & Wamboga-Mugirya, 2017). If KOPGT shows the government's awareness of the need to secure smallholders with necessary support when VODP started, the KOPGA appears an attempt of local people to adapt to the new conditions set by VODP throughout its evolvement.

Having provided some background information, it is now easier to answer the two questions that have been posed as tools to define the degree of collective action and cooperation in a SES. These questions are the following: why do people cooperate? And how can a SES resist without its actors fighting for the same resources, thus leading to a conflictual outcome? Answering the first question is now straightforward: VODP and its partners cooperate among them and with some local smallholders to reach the main goal of the project, that is to use agriculture as a means to foster economic development in Uganda. Smallholders instead, participate and collaborate for various reasons: the stakeholders involved in the project cooperate not only to voice their rights but also because the funds provided for the programme are partly devoted to them; other people, especially poor and migrants, join the palm oil plantations, because these are conceived as a way to earn an income and they do not have much of a choice left than to work there; finally, many local people continue undertaking traditional activities, especially because working in the plantations often means harsh working conditions with little pay. The answer to the second question has already been provided partly: as a matter of fact, conflictual

outcomes have been the result of the shift in land usage and several are the cases of eviction and disputes concerning VODP partners and the local people who contest poor working conditions and violations of land rights. BIDCO, in fact, has been repeatedly brought to court because its complainants claiming BIDCO for having cleared hectares of land and forests without a previous consultation with and compensation for local communities, who have been forces to resettle elsewhere and left without means to sustain themselves and their families. Figure 15 shows a group of farmers who filed a lawsuit against BIDCO and one of its partners for having evicted them without prior consultation and consent nor compensation.

Figure 15 - *Group of farmers in Kalangala who filed a lawsuit against BIDCO*

Note 19. From "Ugandan farmers take on palm oil giants over land grab claims" by A. Mwesigwa, 2015, *The Guardian*. (https://www.theguardian.com/global-development/2015/mar/03/ugandan-farmers-take-on-palm-oil-giants-over-land-grab-claims).

Following the brief analysis of collective action and cooperation, it appears that VODP was conceived as a collaboration among different actors, including those at the local level. However, it would be misleading to say that the cooperation and collective action among VODP and its partners did increase the degree of resilience of community members in general. As previously mentioned, the establishment of VODP has forced many people to find other places to live and other means to sustain themselves; this in some cases, instead of improving the economy of the island, exacerbated already dire socio-economic conditions that had been characterizing the

island before the avenue of VODP. On the whole, it can be said that the establishment of the plantations did foster collective action among private and public partners, as well as with some local smallholders; however, this occurred at the expense of evicted people in particular. The establishment of KOPGT showed the propensity of the government to involve landowners in the project, foster cooperation, thus their capacity to organize and face changes and challenges; this is a way for landowners to adapt to the new circumstances and also to "transform" by creating a new organization which is supposed to tackle both the issues many landowners have been facing since land grabbing activities started, as well as other problems. The capacity to adapt in a "transformed system" is therefore seen in the way some locals and many smallholders, instead of allowing palm oil plantations to become an obstacle, have turned this into an opportunity that can and does have its benefits also for locals. By following the example of KOPGT through which landowners were involved, the government should take into consideration also those evicted people who relied on the forests' biodiversity; this could be done by promoting different projects that include, not only activities strictly connected to palm oil, whose monoculture is replacing so many different plants and crops, but also other agroforestry and agriculture practices that are more sustainable in the long run. The empowerment of smallholder farmers through the creation of ad hoc civil society organizations may be a preferrable model to enhance cooperation among the most disadvantaged people and those hit the most by the VODP programme. This is recommended to occur with periodical consultation with and active participation of the locals, together with periodical assessment reports monitoring the socio-economic and environmental developments (Ssemmanda & Opinge, 2018). This could be a way to create and inclusive and efficient network that can foster collaboration at all levels and raise the degree of resiliency of all actors and the environment all together.

Clear system of rules

The actors involved in the Vegetable Oil Development Project are several and some of these have already been mentioned; however, it may be useful to define a clear list of the actors involved, the roles each of these have within the project and if their role is contributing in building resilience. In order to do so, the actors involved in VODP are detailed below together with their role within the project. Then an assessment of their contribution in fostering resilience will be provided.

First of all, the actors involved in the original project designation were the following: firstly, the government of Uganda represented by VODP; secondly, BIDCO Oil Refineries Ltd, "a private limited company and leading marketer of edible oils, soaps, and hygienic products in East and Central Africa", which, according to Twinamatsiko (2013), is also the largest agribusiness and the "first investment in large-scale plantation in Uganda" (p. 13). This agribusiness is further composed by three entities, namely BIDCO Uganda, Wilmar and Oil Palm Uganda Limited. In order manage and facilitate the negotiations between the government and private partner (BIDCO), the World Bank played a key role since the project started up until August 2004; after then, the United Nations Office for Project Services took over in September 2004, fulfilling its role as supervisor (IFAD, 2011). Another important partner is the International Fund for Agricultural Development (IFAD). Finally, the government established the Kalangala Oil Palm Growers Trust (KOPGT), which was to enhance and manage communication between farmers and the private and public partners. In addition to this, an independent association was formed in 2007: this is the independent Kalangala Oil Palm Growers Association (KOPGA) formed "by farmers who wanted separate organization to promote their interests, though this was not part of the original design" (Ssemmanda & Opinge, 2018, p. 8).

Each of the actors listed above have well-defined roles and their responsibilities can be found in two agreements signed in 2003, with the exception of KOPGA, whose role has been defined later. More specifically, to comply with the main aim of the project, that is to foster development in the region, the government agreed to provide areas of land for the introduction of commercial oil palm production in the island. BIDCO Uganda's role was to manufacture and produce the good for the market; Wilmar was charged with the starting phase and management of the plantations; Oil Palm Uganda Limited managed the oil refinery near the plantations in Kalangala. IFAD is key partner of the government as it has ensured VODP with loan funding and monitoring and "supporting the government's 'behind-the-scenes' activities during negotiations with BIDCO" (Ssemmanda & Opinge, 2018, p. 9). KOPGT's main role include the mobilization of smallholders in the participation of land surveys, distribution of services and inputs, record production of oil palm delivery and management of financial issues more broadly (Ssemmanda & Opinge, 2018). Finally, when KOPGT developed into an effective organization, this was supposed to include smallholder farmers willing to benefit from the project and, more importantly, to have their interests promoted; in order to do so, KOPGA

fosters the dialogue among farmers so these can discuss, propose and make requests; such requests are then negotiated with KOPGT thanks to three members of the association that are also part of the KOPGT board (Ssemmanda & Opinge, 2018).

Now that the main actors and the roles have been defined, it is necessary to define the degree and the way through which their contribution is increasing the degree of resilience, not only of the people and partners directly involved in the project, but also those who are not partners but are affected in a way or another. The fact that the actors mentioned have a well-defined role is certainly an effective way to organize an institutional mechanism that involves private and public actors at both national and international level; from this perspective, VODP is managed well and facilitates beneficial outcomes to be reached. A glaring example is the decision of the government to allow the establishment of KOPGT, which has been a useful commercial link between farmers and the private partners. This, together with KOPGA, has fostered cooperation among different levels, participation and representation of smallholders, who benefit from this. Among the various benefits the stakeholders enjoy, two may be mentioned: firstly, stakeholders are directly consulted so that they can tell their concerns and the issues they face on daily activities; secondly, they are also backed by the financial and technical support of IFAD, which provides funding, supports infrastructure development and responds to stakeholders' concerns. From this perspective, strategic interaction and positive outcomes can be detected given the well-defined roles each actor has within VODP project. However, there is another group of actors that do not have a specific role in the project but have been directly or indirectly affected by the project, these are the local people. Despite local economic benefits have been reported to have resulted since 2010, when the plantations become productive, many are the negative impacts regarding the participation and beneficial outcomes for local people. Apart from the social conflict over land, which have already been mentioned, IFAD also reported other issues that were written in the interim evaluation of March 2011; this document reported that, from the moment the plantations became productive, the participation of local people was not high for various reasons: firstly, some locals did not trust VODB, being the same project that left them home- and landless. This is especially true for those landlords who sold their land without free, prior and informed consent: this was reported to have happed to at least 80% of landlords, a number that definitely justifies the lack of trust towards the VODP and its partners; in addition, the project did take long before becoming effective, this certainly does not increase the trust of locals towards the project. This resulted in the exacerbation of the social situation

in Kalangala that needed to be tackled. In fact, in January 2019, soon after the second phase of VODP was concluded, the National Oil Palm Project (NOPP) was designated to consolidate investments under VODP, support oil palm producing communities and support activities complementary to oil palm investments, whose role is mentioned in the documents regarding the new phase of the project. This is a sign suggesting the acknowledgment of the government about the need to create a comprehensive rural transformation that includes a greater number of local people, whose role is written in documents.

All in all, even if the project took long before entering the production phase, in the meantime VODP has managed to clearly define the roles of each actor involved in the project. The further involvement of farmers in 2007, when the KOPGA was formed, has certainly been a step forward in rendering the project a more comprehensive one. However, the project needed to define also the roles of those people not directly involved in the project; in this regard NOPP was designated "with the goal to 'create inclusive rural transformation through oil palm investment'" (Ssemmanda & Opinge, 2019, p. 6). The participation of locals in other activities, different from oil palm production, is essential especially for the future, when the palm oil plantations may not be productive anymore; however, this participation must go hand in hand with the recognition of land tenure rights to local people and forest communities: this to recognize their right to access resources and their role in alternative and sustainable agricultural practices, which could allow them not only to increase their income but also to sell the surplus in local markets. Certainly, managing everyone's problems in not an easy task, but the way the project has been conceived and managed along the years among different actors suggests that promoting inclusiveness is possible when there is interest in doing so. Having a well-defined role fosters social cohesion and raises the sense of inclusiveness among all the community members: this is certainly a way to guarantee that in times of difficulty people would get together, act, persist, adapt, and transform when needed.

Efficient monitoring mechanism

Thanks to the partnership between VODP and the private and public companies and organizations, not only duties and tasks are spread and easily managed, but also monitoring the activities becomes easier. The fact that everyone has a specific role allows actors to become experts in the field they are entitled to; this enables the actors to accomplish their tasks and detect all those issues that could be avoided or overcome. The establishment of such

cooperation is a different way to monitor the activities. However, a central monitoring mechanism is necessary especially when the actors involved are many, as in the case of VODP. In this regard, the IFAD office evaluation is reported to have been pivotal in the supervision process. The IFAD office evaluation has undertaken several assessment reports concerning the performance, impacts and results of the projects' activities. This is a standard procedure undertaken by the office to have a compete and updated assessment of the evolution of the agricultural projects. Before writing these reports, a team is in charge of visiting the oil palm project area in Bugala Island; here they monitor the activities, evaluate their effectiveness, as well as their social and environmental impacts. Once they have collected all the information also thanks to specific studies about "participatory rural appraisal of household level impacts", "macro-level analysis of poverty" among others, the team can file the report and provide some recommendations that can be applied at the local level (IFAD, 2011). The final reports have resulted to be a useful tool to collect updated and official data, which is necessary to take stock of the situation and generate future recommendations based on recent and analytical data. Assessment reports are also necessary to understand where to invest more funds: in fact, the provision of services and technical support to farmers cannot be functional without an efficient monitoring mechanism. Knowing where to invest is a way to address issues that can help fostering development, addressing social and economic issues, thus increasing the degree of resilience.

However, to have a complete assessment of what happens daily, farmers and people working the land have to be given voice. This is partly managed by the Kalangala Oil Palm Growers Association (KOPGA), which "gives farmers a platform to discuss and formulate proposals or requests that can be negotiated" (Ssemmanda & Opinge, 2018, p. 8). Information is therefore directly provided by and to farmers, who are constantly facing both benefits and drawbacks; this not only fosters inclusiveness, but it also allows practical actions to be done, maximize benefits while mitigating obstacles. Other important mediators that should be included in the monitoring mechanism are local NGOs, which are potential independent auditors that can develop together with the local people, especially the most vulnerable and negatively affected by the palm oil project. However, funds are needed for the activities led by the NGOs otherwise, technical support needed to persist and adapt to the everyday challenges is difficult to supply.

A monitoring mechanism is necessary also to control whether the land is used in a sustainable way or not. Especially in the case of Bugala Island, where palm oil trees have become the dominant land cover. More specifically, palm oil plantations cover 28% of Bugala, "followed by tropical forest, fully stocked and subsistence farmland with 20 and 17% respectively" (Ssemmanda & Opinge, 2019, p.26). The changes on the use of land are undeniable, the National Forest Authority[3] and the National Environmental Management Authority[4] are great contributors in reporting data about the use and cover of land. The National Forest Authority in particular, has provided data and satellite images showing the changes in land use since the beginning of this century. If in year 2000 forests were covering 58% of Bugala Island, these were reported to have reduced to 20% in 2019. Palm oil substituted grassland as well: this is reported to have reduced by more than half from the year 2000 to 2019. Such data have been collected during fieldwork through the consultation of district and local government officers, as well as palm oil company personnel; consequently, data have been reported in an assessment report of 2019, in which the authors reported the predictions about land changes and the consequences on the SES (Ssemmanda & Opinge, 2019); in Table 5, predicted changes in land cover/use percentage have been reported together with the land cover/use changes from 1990 to 2017. This is a useful tool to monitor the impacts VODP I and II had on land, and the consequences that the new ten-year project (NOP) will cause when the third phase will come to an end.

Table 5 - *Land cover/use percentage of Bugala island between 1990 and 2017, with future prediction*

Name	*1990*	*2000*	*2005*	*2010*	*2017*	*2030*
Tropical high forest, fully stocked	57	58	27	26	20	17

[3] Since 2003, the National Forest Authority is a body of the Ugandan central government and its mandate is to manage the central forests, natural reserves as well as all the products these could provide.

[4] Since 1995, the National Environmental Management Authority is the principal agency in Uganda responsible of the monitoring mechanism, coordination, regulation, and supervision of the use of natural resources. It also provides important guidelines, policies, and regulations to manage the environment prudently.

Tropical high forest, depleted	0	3	19	3	5	3
Woodland	1	2	16	16	10	7
Bushland	0	0	1	2	2	1
Grassland	27	14	10	5	6	5
Wetland	0	11	9	9	10	-
Subsistence farmland	15	12	6	15	17	15
Oil palm plantations	**0**	**0**	**11**	**24**	**28**	**36**
Urban or built-up areas	0	0	0.1	1	2	-

Note 20. Adapted from "An assessment of the impacts of oil palm in Kalangala and Buvuma: Lessons learned and recommendations for future developments" by R. Ssemmanda & M. Opinge, 2019, p. 29. (https://www.tropenbos.org/resources/publications/an+assessment+of+the+impacts+of+oil+palm+in+kalangala+and+buvuma).

By collecting ground truthing data and land maps produced by the National Forest Authority, the authors of the assessment report of 2019 provide pivotal information to guide development plans towards more a more sustainable direction. Especially given the fact that negative impacts on the environment are evident. In fact, the National Environmental Management Authority has been reporting the impacts of land grabbing activities on the island ecosystem. This is important to define how negatively large-scale palm oil plantations are impacting on the biodiversity and land fertility. What resulted from scientific analysis is that the establishment of palm oil plantations has led to a loss of biodiversity both of animal and plant species. More precisely, the National Environmental Management Authority provided the hectares of forests, grassland, private land deforested and degraded to give way to palm oil plantations; in addition, they also claim that the encouragement of monocultural agricultural activities and agrochemical-

intensive farming system, as it is the case of palm oil plantations, contributes to "loss of genetic diversity through overspecialization and pollution of subsoil ecosystems" (Ssemmanda & Opinge, 2019). The government and its partners should make treasure of the information and data regarding the impacts of palm oil monocultures. Such information is within everyone's reach and the scientific knowledge and tools todays' society has collected is enough to convert large-scale oil palm production into more sustainable projects. What is the main issue is that large-scale palm oil production has higher yield in shorter time if compared to other small-scale agricultural projects, which are scientifically proven to be more sustainable both socially and environmentally.

Overall, a monitoring mechanism at the VODP level is functional; however, the inclusion of the most badly affected people shall be taken into consideration and managed better. From an environmental perspective, the National Forest Authority, the National Environmental Management Authority, and other scholars provided useful data and tools to monitor the environmental impacts allowing future predictions to be made. Nevertheless, this does not translate into the government and its partners action towards a more sustainable use of land when it comes to oil palm plantations. Monitoring the environmental impacts is essential to plan sustainable use of land and conservation of natural areas so that the palm oil project can be feasible in the mid- and long-run. Evidence suggests that in the short term the costs connected to environmental impacts do not outweigh the losses, but this may not be the case in the long run: species are already starting to extinguish, the water of the lakes as well as the air are being contaminated by fertilizers. It is widely agreed that the impacts that large-scale plantations have on the environment is definitely higher with respect to small-scale agricultural activities. The scientific data available is enough to prove that the way land is used for oil palm plantation is not sustainable in the long run. For this reason, the government and its partners should consider the establishment of alternative uses of land and invest in local organisations and communities.

Polycentricity

Presuming that polycentricity is defined by Ostrom as a system where not just one but multiple governing authorities are organized at different scales, the way palm oil productions in Bugala Island have been established under VODP is an example of a polycentric institutional mechanism. More specifically, polycentricity can be detected in the way rules and roles have

been subdivided among the actors involved in VODP. In addition, being VODP a private-public partnership, its actors collaborate one with other while everyone specializes in their area of expertise. The government represented by VODP, its private and public partners, as well as farmers may be conceived as gears that allow the whole governance system to function properly. This allows the project to function well and maximize the benefits. As a matter of fact, the benefits that the partnership is leading to are several and the Ugandan Government believes this collaboration to be functional for various reasons. To prove this, the main benefits of this polycentric mechanism at the base of the private-public partnership may be provided. First of all, the fact that private and public actors do have financial capacities and strategic interests in participating to the project ensures macro-economic stability; in simple terms, when big actors are involved and their interests are at stake, external vulnerabilities that could undermine the project are mitigated and shared among actors; this protects the system from external vulnerabilities, thus renders the system more resilient. Another economic benefit derived from the polycentric mechanism at the base of VODP is that agricultural and agrobusiness sector have become more competitive in the international market. These economic benefits can, and in some cases did, translate into socio-economic benefits such as poverty reduction, thanks to the involvement of Ugandans in the palm oil plantations, and hunger alleviation.

However, there is evidence suggesting that the majority of palm oil production is destinated to the international market and not to the local ones. This, together with other social issues that will be better explained in the last enabling condition regarding access to basic services and resources, are the proof that the degree of polycentricity is higher at the VODP level while is lower at the one of the local communities; fortunately, KOPGA was established and its role has been vitally important in allowing local farmers to make their requests, discuss and advance their proposals. KOPGA is therefore and important mediator attempting to reduce the distance between “top” and “bottom” levels. However, too many people still remain marginalized and have been suffering from land, environmental and human rights violation. Glaring examples of this are those evicted people who were deprived of their land without prior consent and “still face serious under-nutrition and lack the most basic needs such as safe water, healthcare, and absence of violence” (Ssemmanda & Opinge, 2018, p. 34), not to mention the spread of HIV, the increasing level of insecurity also for women due to the increasing prostitution rates and domestic violence among others. These are issues that are too important to be left a part

especially because it regards many community members; therefore, it is necessary to foster inclusion also of the more vulnerable. For this reason, it may be suggested that the government, IFAD and BIDCO support and develop alternative activities, to which vulnerable people can participate and benefit from. These alternative activities must be subjected to prior analysis concerning several aspects: social, gender and environmental impacts which are proven to be a general issue in Bugala Island. These activities may also be monitored by NGOs and members of the civil society, who are constantly updated about the social and environmental concerns. Involving these actors in sustainable activities will increase the degree of polycentricity, thus resilience at the bottom level.

On the whole, if considering the grade of polycentricity at the partnership level, this is quite high. However, polycentricity is such only when it includes actors from different levels of the society, not only some of them. For this reason, some sustainable and inclusive actions have been suggested in this section not only to make polycentricity effective at the different levels, but also to tackle relevant socio-ecological issues, and render the whole SES more resilient.

Informed society

From the verry beginning of palm oil installations, lack of information among locals was detected. "At least 80% of landlords in Kalangala who sold their land did not do so under conditions of free, prior, and informed consent" (Ssemmanda & Opinge, 2019, p. 6). For this reason, ensuring legal representation, provide certificates of land ownership and inform people about the future projects is necessary. This has to be taken into account especially in the ongoing third phase of the project that is the National Oil Palm Project (NOPP) implemented in January 2019: people have to be informed about the locations and uses of the land under deal following the practice of *free prior and informed consent*, which not only is a specific right recognized internationally by the United Nations, but also by the Ugandan Constitution. Other important rights are guaranteed under the Ugandan Constitution and the Uganda Land Act, such as the right to fair compensation and resettlement; however, many people do not know about these rights. Information is therefore necessary to avoid or diminish land and social conflicts that have been characterising the previous projects.

Not only people must be informed about their rights, but they also have to be provided with the tools to understand them. To do so, illiteracy has to be fought and, in the meantime, clear information dispensed orally. This can occur through various means and Etamam and the

United Organization for Batwa Development in Uganda (UOBDU) provide examples to be followed: for instance, information could be dispensed through training centres held by stakeholders or NGO's social assistants, who periodically visit villages and inform people. This has proven effective for the Batwa people and a strategic way to also foster inclusiveness and trust at the household level. Obviously, schools and education centres are necessary to fight illiteracy and spur innovative thinking among locals: as a matter of fact, in 2014, 23% of adults were reported to be illiterate (Ssemmanda & Opinge, 2018). Even if some families have reported to being able to afford to send children to school thanks to the employment in palm oil production, these are just a little portion and are a sign that access to education is unequal and not affordable for everyone. More schools and education centres must be open and accessible to all males and females. This especially from the moment that "OPUL's workforce is very much male dominated because the recruitment process favours men, social prejudices regarding women's ability" (Ssemmanda & Opinge, 2018, p. 33). Some data provided in 2019 reports that out of the 15% of locals engaging formal employments, only 18% are women (Ssemmanda & Opinge, 2019). Education and training centres, especially for adults and potential future workers must provide information about the costs and benefits oil palm and alternative activities lead to; this to allow people to make informed decisions and lead them to think about alternative and sustainable options that can result in a win-win solution for them and the environment. As a matter of fact, partners are already providing funds for building infrastructure and training centres, but these are specifically regarding the palm oil project; for this reason, funds must be ensured also for education centres for alternative activities and the collaboration of the civil society and NGOs is precious to spread official information which is available thanks to the periodical assessment reports made accessible.

All in all, technical and scientific information is available; therefore, what has to be improved is the access to clear and true information to allow people, also the illiterate, to understand it. This will allow rural communities to make informed choices, spur innovative thinking that can translate into more sustainable actions both socially and ecologically; in addition, knowing their rights will allow rural people, who are proven to be the most hit by land grabbing activates, to protect themselves from injustices. Finally, access to training centres and school is proven to be an efficient way to inform both men and women of the damages certain activities can make to the ecosystem: this can lead people to opt for more sustainable livelihoods. Moreover, the government and its partners are also dispensing information: this is mainly done through the

assessment reports that have been made along the years; analysing socio-economic and environmental impacts, made it possible to detect both benefits and drawbacks of palm oil plantations. This allows actors to develop alternative activities to manage the issues that have emerged. An example is the National Oil Palm Project (NOP) under the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF), which is taking into consideration the lessons learnt from VODP I and II to address the missing links of within the previous phases of the oil palm project. In fact, NOP aim is to support communities involved in the palm oil production as well as empower community members to develop and seize non-oil palm farming and non-farming livelihood activities. This is a sign that the Ugandan Government through the Ministry of Agriculture and Animal Industries and Fisheries are trying to make the project a sustainable option economically, socially and ecologically. Only time can tell whether NOP will lead to sustainable outcomes or not.

Access to basic services and infrastructures

As already mentioned, the plantations were introduced in Kalangala in 2002, but did not become productive up until 2010: from this time, the production of palm oil is reported to have "benefitted the national economy through import substitution and associated foreign exchange savings, with many associated local economic benefits" (Ssemmanda & Opinge, 2019, p. 5). This means that some benefits on the agricultural sector have been achieved and may be reported here. First of all, palm oil plantations have created employment in Bugala, increasing rural income for some smallholders and outgrowers, of which only 30% are women. Women employed in OPUL are only 18% and very few at management level" (Ssemmanda & opinge, 2019, p. 40). Generally, infrastructure has developed thanks to the funds VODP's partners have provided to make palm oil plantations functional and transportation of palm oil seeds to oil refineries easier. Mills, processing plants, services sectors, roads are all examples of infrastructure built since the project was conceived. The transportation sector in general has benefitted greatly from oil palm activities, with local people directly employed as motorcyclists and taxi drivers to drive people to work, at least those who can afford the ride. The number of services such as hotels, beaches, small restaurants among others have been growing also to satisfy the raising number of people arriving in the Island since the oil palm project started. Obviously, these services are usually not affordable for the locals but opens new job opportunities. Finally, a bank was introduced in 2018 together with a loan facility for farmers;

however, only 80 farmers have borrowed money from the bank and only two people from Kalangala district were reported to be employed in 2018 (Ssemmanda & Opinge, 2019).

The expansion of oil palm plantations in Bugala Island has certainly brought economic benefits but these are inequitably distributed and accompanied by negative environmental and social impacts. One of the first things that has been negatively affected by palm oil plantation was access to land: as already mentioned, many people and landlords were forced to sell their land, others were evicted and not allowed to access what had previously been their home. Forests, which were ancestral home and source of income of many islanders have been destroyed or turned into national parks. What is more, land has become an increasingly scarce resource due to palm oil plantations covering a big portion of the land available in the island; the lack of access or arable land, not only led to numerous land conflicts between OPUL and people who were evicted, but also left people without the possibility of earning an income, causing levels of food insecurity to rise, exacerbating social inequalities, increasing both land and domestic conflicts. Women are the most disadvantaged when it comes to the right to own and access land: even in cases in which land is not deprived, women rarely own pieces of land. This together with land grabbing exposes women even more, especially those who were relying on forests for the production of handicrafts and on land for crop production. Being the majority of women the "major providers of food in the households" (Piacenza, 2012, as cited in Ssemmanda & Opinge, 2018, p. 32), it becomes clear that denying access to land leads to terrible consequences for women and entire families. Moreover, access to basic services and infrastructure are not dispensed equally among locals neither; on the contrary, according to 2014 data, 73% of households in Kalangala district "had no access to safe drinking water, 24% had no toilet facilities" (*UNBS, 2017*, as cited in Ssemmanda & Opinge, 2018, p. 7*)*.

One of the main goals of the palm oil project in Bugala Island was to bring sustainable poverty reduction by raising rural incomes. On the one hand, palm oil plantations did provide job opportunities, but it has put pressure on the main working activities in the island: these were food crop production, which has been replaced by palm oil, and fishing in the lake. Oil palm plantation have therefore negatively impacted on these two sectors that saw many local people employed. Many locals are still employed in such sectors but not without pressures undermining their stability, thus resilience. Islanders are aware of the harsh working conditions and low pay rates they would face if working in the plantations, which are reported not to be a viable alternative for many islanders who prefer undertaking different activities. As a result, only

locals with no alternative working options and migrants from outside the island community work for the company's plantation. The migratory phenomenon is quite an impacting one: due to migration, population in the island has increased while land available is decreasing and social services such as health, water and sanitation remaining unequally and poorly distributed, making it impossible to satisfy the growing number of people in the island. All this has resulted in anti-social behaviours in the villages, increase in prostitution and "hampering efforts to manage HIV/AIDS", and social and food insecurity in the island more generally (Ssemmanda & Opinge, 2019, p. 7).

Access to resources is also connected to the environmental impacts oil palm plantations are causing. Research on the ground has found that "environmental impacts of developmental projects tend to pose more threats to the environment than benefit" (Ssemmanda & Opinge, 2018, p. 23). As already mentioned in chapter one, large-scale plantations and use of fertilizers do damage the ecosystem, reducing soil fertility and polluting nearby lakes and water sources. This reduces and, in worse cases, leads to the depletion of vital resources, increasing food insecurity, resource conflicts, as well as people's vulnerability among others. In the long run this will compromise SES's resilience causing unsustainable socio-ecological conditions. The environmental impacts are already evident but these are expected to be even more impacting in the long term, especially because oil palm plantations occupied nearly 60% of farm land thus reducing the land available for other crops. To limit these impacts, intercropping activities have been introduced. However, the initial satisfaction of farmers, when they received seeds for intercropping did not last long; this because they "realised that this was a very temporary intervention since it was only possible within the first 4-5 years when the palm trees are still young" and small enough to allow other crops to be cultivated (Ssemmanda & Opinge, 2018, p. 43). To make things worse, cultivation of other crops is not possible for at least 25-30 years, being this the lifespan of palm trees. Despite the implementation of some buffer zones, in which herbicide, chemical treatments and plantations are not allowed or reduced to the minimum, these are not enough to compensate for the vast portions of land covered by oil palm monocultures; as a matter of fact, after all these years that land has been cultivated and fertilizers used, the land left will be certainly less fertile.

Given the evidence of the social and ecological impacts palm oil has led to since the begging of the VODP project, lessons have been learnt. In fact, since 2019, when the oil palm project entered a new phase with the establishment of the National Oil Palm Project, investments for

complementary activities to palm oil have been consolidated (Ssemmanda & Opinge, 2019). These activities include non-oil palm farming, non-farming livelihood activities such as ecotourism projects. As far as palm oil activities are concerned, NOPP is to establish "efficient oil palm industries, that comply with modern environmental and social standards' (IFAD, 2017, as cited in Ssemmanda & Opinge, 2019, P. 17). All in all, palm oil plantations have been established in Bugala Island because of the vast portions of fertile soil available, perfect tropical climate conditions and proximity to the Lake Victoria; not surprisingly, the areas surrounding the lake are those that have registered increasing land productivity (Aijuka, Akidi, et al., 2018). However, since the plantations have been installed both positive and negative impacts have been hitting the socio-ecological system of the island. Certainly, the project provided job opportunities in the plantations and oil companies and refineries, but this happened at the expense of other jobs such as fishing, which is reported to be more lucrative. Livelihood options have been limited, reducing rural income in many cases. This together with other pressures such as migration and growing population in the island is leading to a tragedy of the commons, in which services and infrastructure are not enough to satisfy the growing population. Environmental issues are also directly and indirectly caused by palm oil production: the most evident damage is the exploitation of land for palm oil at the expense of arable land, forests and green lands; in addition, fertilizers are running into the water lakes polluting fisheries, impacting on the lake ecosystem and, consequently, on the fishermen relying on this resource system as main source of income. For all these reasons some suggestions were made regarding the development of sustainable alternative activities to oil palm so that both the community members and the environment can benefit.

3.4.3. *Conclusion*

What has been proven throughout this last analysis is that the Ugandan Government and the investment funders have proven efficient in managing the relations and partnership with the partners involved in oil palm production, whose global and national demand has been increasing in the last two decades. The Ugandan Government and its funders' decision to invest in a growing sector based on agriculture, that is the main economic activity in Uganda, has proven a strategy whose goal has been to raise the national economy as well as the dire social conditions of its people. Moreover, this third case is also another example of a "development project" in

developing countries whose aim is to raise the national income of the country so that the dire social conditions will improve consequently. However, it has been proven that social prosperity is not a direct consequence of economic growth. In fact, in the case of oil palm production in Bugala Island, economic benefits are not equally spread; on the contrary, many people are left a part or even dispossessed and consequently left with no means to sustain themselves and their families as it was the case for the Batwa and many Karimojong who faced land grabbing. For this reason, the analysis concerning the degree of resilience of the SES had two focuses: one regarding the management and functioning of VODP, which is proven an efficient and promising programme and partnership; the other concerning islanders' resilience, which has been affected by the establishment of the plantations in different degrees. Furthermore, oil palm plantations, especially large-scale plantations, in which the use of fertilizers is degrading the soil, air, waterways and aquifers, is leading to negative impacts on the environment. This has spillover effects on the surrounding resource systems (other fields, crop plantations and lakes) as well as the resource units, such as animal, fishes and plants, living there. Resilience of such systems and units is undermined, in some cases their natural equilibrium has already been altered and this is proven by the extinction of some animal and plant species that were present in the area before the palm oil installations.

What is suggested is more attention to the social and ecological components; this is essential if the programme wants to reach not only short-term economic goals but also medium and long term ecological and social benefits. This because economic growth should be conceived as the outcome of sustainable interactions between the human beings and the natural environment. For this reason, the Ugandan government and its partners should invest more in the social sphere: for instance, provide funds for education and training centers; support and recognize the help of NGO's, charity and civil society groups, farmer organizations, which are pivotal in building a connection between the government and the locals. By doing so, and the Batwa and those involved in Etamam are the proof, information and training is easily dispensed allowing people to make more informed choices and start alternative activities that are a win-win solution for both the economy and the environment.

In this regard, in 2020, IFAD reported the lessons learnt from the projects and these acknowledgments are needed to "develop an oil palm development policy that outlines the contours of future engagement with farmers, farmer organizations, local financial institutions, marketing channels and processors" (IFAD, 2020). Since oil palm does have a market-based

approach, it is important to build an efficient and inclusive model in which civil society, and local organizations are increasingly involved. This has already taken place during VODP II and resulted to have positive impacts in reducing disparity between income of oil palm farmers and landless people, including women. All in all, IFAD and the Ugandan government are aware of both benefits and negative consequences of palm oil and are working on addressing the issues in order to build a stronger and resilient model for future projects both from a social perspective and an environmental one. However, being palm oil production driven by the global market, the future of oil palm plantations in Bugala Island is likely to increase; for this reason money, energy and time must be invested to make the oil palm production more sustainable now and for future developments and this can be done only if alterative activities, such as other crop production, tourism, forestry work and fishing, are incentivized and undertaken in a sustainable way.

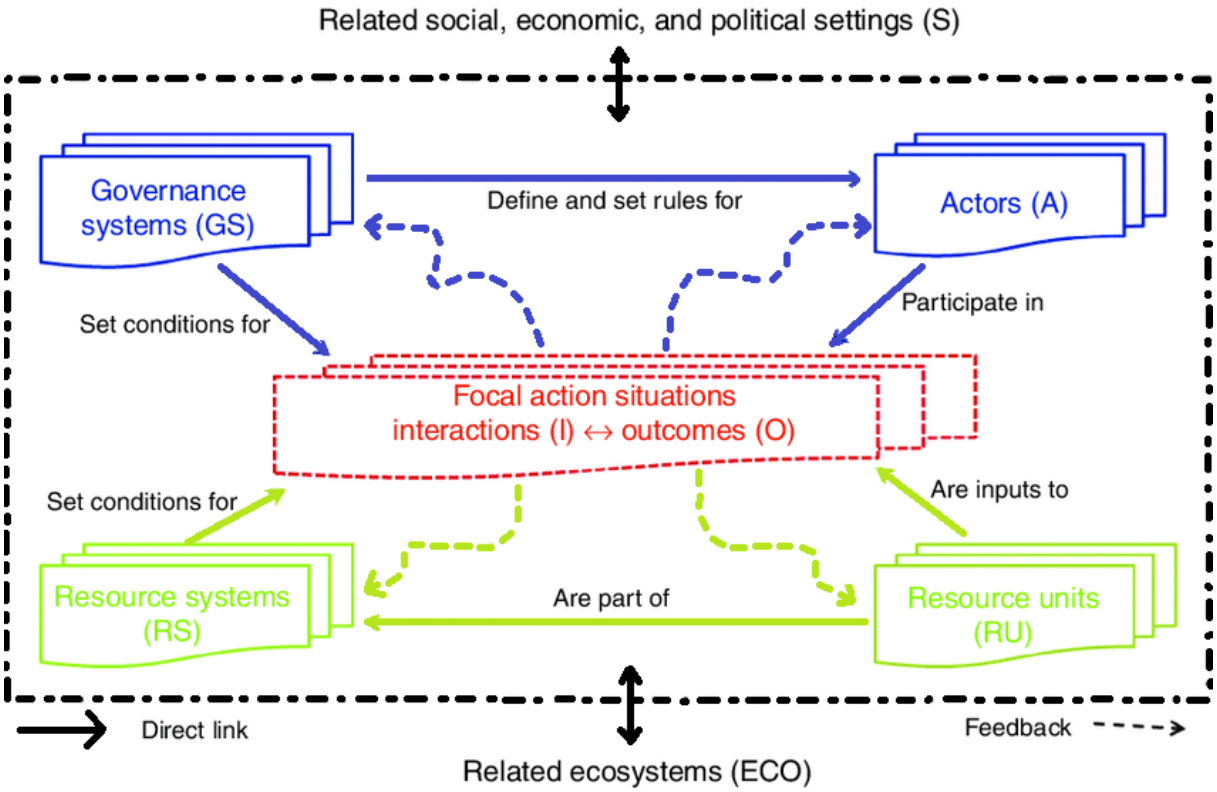
Conclusions

Land grabbing is both manifestation and exacerbator of land inequalities, which in turn fosters further inequalities. The cases analysed are the proof of how unequal access to land, unbalanced power relations among the actors involved in the land system can worsen socio-ecological issues such as access to basic services and resources, unemployment, socio-political injustices, climate and environmental crises among others. All the three cases analysed throughout this work are reporting stories of people who have been facing land grabbing. Land dispossession is therefore the lowest common denominator of many Ugandans, more specifically of the pastoralists living in the Karamoja region, the Batwa people living in the southern-western part of Uganda and, finally, the islanders living in Bugala Island in Lake Victoria. The Karimojong, the Batwa and Bugala islanders are the main characters of the three stories reported; their capacity to persist, adapt and transform has been defined through a detailed analysis of what have been named as the six enabling resilience conditions, which are the following: collective action and cooperation, clear system of rules, efficient monitoring mechanism, polycentricity, informed society and access to basic services and resources. These are certainly not the only factors that define whether a socio-ecological system is resilient or not, but these six enabling resilience conditions try to encompass several aspects that range from social, economic, political to environmental issues, all exacerbated by land grabbing. A brief and comprehensive summary of the findings may be provided in this conclusion by going through the main results. At the end of this section, Table 6 reports the main findings resulted from the analysis of the six enabling conditions divided per case.

First of all, what was proven throughout the cases analysed is that land inequality hits everyone, but some people are more affected than others: peasants, indigenous people, small producers and agrarian societies more broadly, are those who use more the land for living and for this reason they are the more vulnerable to land grabbing activities. The Karimojong and the Batwa are two examples of indigenous groups, whose customary rights over land have been violated; a similar thing happened to Bugala islanders, who were owing pieces of land under different land tenure systems and many of them have been forced to sell land to investors. However, the cases analysed in this work are not the only examples of land dispossession in Uganda; unfortunately, there are many other stories reported by NGOs, charity and civil society organizations. These actors, at least those who are seriously undertaking their roles, are widely

spread in Uganda and are raising funds to undertake different activities in which the most disadvantaged people are supposed to be involved in: very often the people involved in such activities are communities, minority groups, street children, whose rights have been repeatedly violated. In all three cases, attention was posed to the role of non-governmental groups, which have been crucial in listening to locals, voicing their rights, helping Ugandan communities to draw out the potential locals already possess and translating these capacities in sustainable actions. For this reason, polycentricity has been set among the six enabling conditions that make a SES resilient: polycentricity is a way to shape and define the connections and relations among the actors within a SES. To do so collective action and cooperation among groups at different levels is necessary but all the actors have to be given a well-defined role so that the resource systems and units are clearly managed; this is proven shape stronger ties and connections among all the SES components. To better understand how polycentricity, collective action and a clear system of rules make a SES stronger, it may be useful to report in Figure 16 the image about social ecological systems: here the interactions among different actors and the resource systems and units are illustrated by the arrows. It may be assumed that, when collective action within a polycentric system is efficient such arrows become thicker, which means that the capacity of the whole SES to face both internal and external shocks has strengthen. As summarized in Table 6, in all the three cases, polycentrism, collective action and cooperation, and clear systems of rules have proven pivotal in strengthening locals' resilience, especially those who were part of organizations, namely, Etamam, UOBDU, and KOPGA.

Figure 16 - Social-ecological system (SES) framework



Note 21. The arrows in this figure are thicker than those in Figure 2; this to show that when the interaction among all the components is strong and well-defined, the overall SES becomes stronger and more resilient. Adapted from "Social-ecological system framework: initial changes and continuing challenges", by McGinnis and Ostrom, 2014, Ecology and Society, 19(2): 30, p. 4. Copyright © 2014 by the author(s). (http://dx.doi.org/10.5751/ES-06387-190230).

A further issue on which this work focused is the fact that people is still facing injustice, more specifically, land related ones; this means that not much attention is given to the Ugandan people's human and land rights, especially the most disadvantaged and poor, who are already living at the margins of society and are excluded from many activities and sources of information. For this purpose, throughout the analysis of each of the three cases, attention was given to the dispensation of information, which is considered pivotal for various reasons: it raises people's awareness of the rights they have allowing them to make informed decisions. More specifically, information has proven essential in Etamam, as it has allowed pastorals to better manage movements and resource sharing, as well as in UOBDU, whose staff has

collected information from the ground to make interventions that embrace the needs of the Batwa. As far as the last case is concerned, information is dispensed by the Kalangala Oil Palm Growers Association (KOPGA) and it is reported to have an important role in promoting the interests of farmers; nonetheless, many islanders are still left apart and their rights are repeatedly violated, but this is not the case only for the Bugala Islanders. Unfortunately, this is the case of many other Batwa and pastoralist as well. Until rights are not respected, economic and political actions are not implemented in compliance with such rights and environmental concerns, socio-ecological development will not come hand in hand with economic growth, which will remain an elite privilege. For this reason, the third case has been analysed in this work, this to prove that social, political and ecological developments are not the direct consequence of economic growth. Instead, what SES framework teaches is that only a holistic approach that considers all the interconnections among actors, resource units and resources and governance system, can be an effective process towards a more sustainable and resilient socio-ecological and political and economic system. This is certainly an approach that calls for the collective action and participation of many actors, an efficient monitoring mechanism working at different levels, so that information and resources are well dispensed and sustainably used among everyone. This approach is time and energy consuming, but the future benefits are scientifically proven to occur if this holistic approach is embraced (IPCC Working Group II, 2022).

Another point that connects pastoralist, the Batwa and Bugala islanders is the difficulty to access to resources and basic services. In all the cases, this appears to be the result of three main issues: land grabbing, that evicts people or/and reduces the portions of land available; environmental issues and climate change related problems, that reduce fertility of land and lead to land degradation; all this is further exacerbated by the fact that land rights are not adequately protected. These three issues are all interconnected being each of them both cause and consequence of the others. For this reason, the recommendations provided are about promoting and guaranteeing both human and land rights, as well as promoting sustainable activities. The lesson that may be brought home from the analysis made, is that secure and equitable land rights, widely acknowledged by the community members and granted by those who are entitled to protect the community from suffering violations, are vitally important (Anseeuw & Baldinelli, 2020). It is broadly agreed that secure and equitable land rights are the basis for social and economic development; politically speaking, decision makers must focus on land

rights, providing not only land certificates of ownership, but also installing a transparent and legitimate mechanism that renders the proliferation of such certificates controlled. This will result, and there is evidence reporting the benefits of such proliferation of certificates in Uganda and in other African countries, in multidimensional benefits: social, economic, political and ecological. An important aspect to consider when dispensing such certificates is also the cultural background of the communities and the literacy level: the latter provides current and future certificate owners, or agrarian populations more broadly, with the tools and concepts to efficiently undergo a deal and avoid them to be screwed by other people. Certificates are a way not only to secure land rights but also to develop more reliable data on land use, which may then translate in a conscious and sustainable use of land or at least facilitate the detection of illicit or illegal land grabbing activities.

Furthermore, the three cases also demonstrated that the activities undertaken by the rural communities, such as pastoralism and agricultural traditional practices "tend to support biodiversity, healthier soils, and water supplies" (Anseeuw & Baldinelli, 2020, p. 17), which is often and willingly not the case when large companies start their activities of deforestation, large-scale mining activities, crop monocultures to mention but a few. There is evidence suggesting that small scale activities that prefer intercropping rather than monocultures and encourage the participation of locals are far more sustainable than large scale activities. In this regard, it may be worth sharing the story of some communities of the Gambia and Senegal who successfully overcame issues caused by land grabbing activities thanks to the promotion of ecological agriculture and soil conservation practices funded by the Canadian International Development Agency (CIDA), which is reported to be Canada's lead agency for development assistance. This project was locally managed by CIDA's partners, who are non-governmental organizations working with local communities "to develop agro-ecological farming systems, climate change and renewable energy options in a participatory manner" (Samson, Kushnir & Ho Lem, 2011, p. 6). This project was initiated in the Gambia and Senegal in 2008 to "accelerate the adoption of ecological agriculture and soil conservation practices" (Samson, Kushnir & Ho Lem, 2011, p. 9); this was done to counter land degradation and desertification mainly caused by human interventions in such regions. More specifically, huge portions of land were previously used in extensive mono-cropping of peanuts which drastically reduced soil fertility (Samson, Kushnir & Ho Lem, 2011), and forests were denuded to satisfy the demand of fuelwood. Such activities led to deforestation, "extreme soil erosion and a reduction in

agricultural productivity as well as carbon returned to soil" (Samson, Kushnir & Ho Lem, 2011, p. 8). The project proved efficient in managing such issues thanks to the holistic approach through which it acted: economic, agricultural, environmental, social and gender dimensions were considered. The introduction of new, diversified and improved crops ensured farmers with a higher and more secure income. Training programmes were crucial for the spread of information among farmers, which included women too; with the establishment of "two pilot Agro-Ecological Village (AEV) projects in five communities in the Gambia" (Samson, Kushnir & Ho Lem, 2011, p. 9), farmers learnt how to undertake sustainable livelihoods while increasing their income and this was possible thanks to training programmes in which farmers could learn more about "intercropping, crop rotation, manure management, composting and soil improvement, food processing, pest control, food security and marketing" (Samson, Kushnir & Ho Lem, 2011, p. 9). On the whole, this project resulted efficient and benefitted more than 5,100 people in the villages, women included (Samson, Kushnir & Ho Lem, 2011). This example was to prove that small scale projects, in which local people are involved and provided with the right information, can result in beneficial outcomes for both the people and the environment; the project resulted successful mainly because of the holistic approach to the issues connected to human-induced exploitation of land. In addition, the spread of information among farmers, who cooperated and undertook agricultural activities, appeared crucial for the project to achieve its main goal; in other words, this project is the proof that collective action and cooperation among actors from different levels of the society is functional when people are trained, informed and adequately supported. Finally, the efficacy of this "comprehensive bottom-up project" (Samson, Kushnir & Ho Lem, 2011, p. 5) not only was proved in the Gambia and Senegal but also in other projects conducted in the Philippines and China. The project in the Gambia and Senegal is an example of successful recover from human-induced disasters connected to the exploitation of large portions of land. For this reason, it may be useful to compare such case to the third case, in which the installation of large-scale palm oil plantations led to a loss of biodiversity and little socio-economic benefits for the locals. The project in the Gambia and Senegal focused on diversifying production in smaller villages, thus including many local people; for this reason it may be considered as a useful example showing practical ways to avoid the damages monocultures can cause to socio-ecological systems and how development projects investing in the agrobusiness do not always translate into poverty

alleviation by employing locals in newly introduced activities; on the contrary, these can exacerbate land and other inequalities.

Even if there are rather successful examples of communities facing land grabbing, each case has its own dynamics: the communities are part of complex SESs that need to be analysed in depth for specific solutions to be suggested. No one-way process can be provided or suggested to deal with all the issues a country can face. Injustice and unbalanced power relations are intrinsically connected to historical backgrounds that date back to colonial times; being current problems so rooted in history, it cannot be possible to solve all issues in short period of time and the third case is a glaring example of this: despite the initial goal of the government to invest in the agricultural sector in order to foster development, alleviate poverty and rise national incomes, the achievement of such aims has not been reached even though it is two decades that the project has been running. Actually, the "palm oil case" is an example of how difficult it is to run a development project that tackles both economic and social issues. The multidimensional aspects to consider when talking about development are many; for example, when trying to deal with the issues analysed in the three cases other questions should be posed, such as: what to do with the resettled people? How to deal with the growing numbers of migrants attracted by the new jobs in the palm oil fields? How to manage the increase in the population number and the growth of prostitution rates and criminality, both connected to growing population and the few services available to satisfy everyone? These are just a few examples showing the difficulties in dealing with all issues. Having said so, the government cannot be blamed for not tackling all the issues because solving an issue can sometimes exacerbate another problem: for instance, when a project's aim is to build infrastructures to provide locals with basic services of all kind – banks, schools, training centres – these are usually built where green lands and fields are located. This is something that happens in every country of the world, and it is also an issue concerning the projects following the sustainable development goals of the UN agenda. This to say that development, socio-economic growth and sustainability are all fuzzy concepts when it comes to their implementation in tackling concrete issues.

The final consideration of this work is that there is no panacea when it comes to deal with all the issues highlighted, and the cases analysed are an example of this; in each of the cases land grabbing hit the communities in numerous ways. The outcomes manifested socially, economically, politically, and territorially and this has happened because everything is

interconnected. As mentioned at the beginning of this work in Chapter 1, every community is part of a socio-ecological system and when the members are hit also the whole SES is hit too. The cross-sectoral consequences that land grabbing has caused is the proof that hitting a part of a chain, causes damages and weakens the entire chain. Ways out are possible, but these have to be provided with the same multisectoral approach with which these issues came. In simple terms, if the damages are social, economic, political and environmental, solutions have to be socially, economically, politically and environmentally related. For this reason, the six enabling conditions were provided as tools not only to analyse the degree of resilience of social, political, economic and ecological systems, but also to provide some recommendations. All the recommendations, regarding intervention and activities, set land and human rights at the basis. Throughout the analysis of the cases what resulted is that many pastoralists, the Batwa and the Bugala islanders have the tools to overcome the concerns connected to land grabbing, and this has been proved by their capacity to face both historical and contemporary injustices: this capacity is called resilience, which has enabled such communities to persist, adapt and transform when facing the issues caused or exacerbated by land grabbing.

Table 6 – *Methodology and results of the six enabling conditions' analysis per case.*

Enabling conditions	CASE 1 - Etamam	CASE 2 - The Batwa	CASE 3 – VODP
Collective action and cooperation Defined by observing the level of strategic interaction and cooperation among actors from different levels of society.	Actors involved in Etamam are from different levels of society and cooperate to ensure access to resources.	The Batwa involved in UOBDU cooperate, meet and discuss about issues to improve their conditions, thus building a stronger SES. Little cooperation between Government and the Batwa (eg. inclusion in National Park projects failed).	Cooperation among private and public partners is functional. Weak cooperation between "top" and "bottom".
Clear system of rules When formal or informal rules are clearly defined and acknowledged by actors from different levels of society.	Etamam practice defines rules and roles among local elders, pastoralist groups, Local Council, district leaders, kraal leaders and visiting groups.	Batwa involved in UOBDU are aware of rules and duties. Batwa are not politically considered by the government, and they are left by the wayside of society.	In 2003 VODP agreement defined roles and duties. Some locals are part of KOPGT, thus involved in palm oil project as landowners or workers. Majority of locals were evicted and do not have a role in the project.
Efficient monitoring mechanism When Communities comply with formal or informal rules. Role of government in the protection of rights; rule compliance is observed.	Rule compliance among pastoralists is high also thanks to the fact that they craft their own rules. Nabilatuk or Morutit Resolution sets compensations if rules are not observed. Issues regarding the low law enforcement by the police are reported.	Periodical meetings monitor UOBDU activities. Chairman, secretary, and district representatives are elected to monitor activities. A monitoring mechanism ensuring respect of Batwa's HR is nearly absents at governmental level.	IFAD office monitors project and makes evaluations of economic costs and benefits, environmental and social impacts. KOPGA provides farmers with a platform to discuss and monitor daily issues. Majority of locals are left a part.

Polycentricity When there is effective organization among multiple governing authorities at different scales ("top" and "bottom" level).	Degree of polycentricity in Etamam is high: functional organization among pastoralist, elders, women, youth, Local Council, district leaders, NGOs. Issue: bureaucracy is time consuming, and some pastorals cannot wait to move if cattle is hungry.	Recognition of UOBDU by the government gives UOBDU the role of mediator between "top" and "bottom". Batwa are not politically considered by the government and HR violations are the proof.	VODP is an efficient polycentric system: the government, private and public investors cooperate. Participation from the "bottom" is scarce (exception made for few locals working for VODP).
Informed society about rules and roles to follow, sustainable use of resources, rights and duties. Presence of schools and training centres has been observed to define level of information.	Information provided through official reports, meetings, dialogues among elders and the communities. Few "powerful" women are involved in the decision-making process as well. Number of children attending schools is increasing.	No free, prior and informed consent. Batwa in UOBDU asked for training centres which are spreading important practical knowledge. Information concerning their rights is spread through meetings. Illiteracy is still widely spread among Batwa.	Local landowners were evicted without being previously informed or adequately compensated (information by government nearly absent). People must be informed about the chance of getting a certificate of ownership. Information and technical knowledge about sustainable use of resources should be spread among locals.
Access to basic services and resources Defined by the possibility of actors to access basic services and resources. Identification of the elements impeding such access.	Scarce. In Karamoja access to resources is impeded by infrastructure building, "over 60% of the land licensed for mining activities", longer drought periods due to climate change. To overcome such issues Etamam is effective since is conceived as a practice that aims at managing access to resources.	Very scarce. Access to resources has been denied to the Batwa since eviction. UOBDU and private donors are trying to improve such condition by building some infrastructures, leasing portions of land that can be tilled by the Batwa, training and educational centres.	Mediocre. VODP created some employment; most people in the plantations are migrants, while many locals were left with no arable land to grow crops. Transportation sector benefitted. Infrastructures built (hotels, restaurants, a bank). Access to basic services remains poor: high percentage with no access to safe drinking water nor toilet facilities. Oil palm is replacing other crops.

Note 22 – Source: own elaboration.

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