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COMPARING LAND USE POLICIES IN SEVEN EMERGING AND DEVELOPING COUNTRIES (TUNISIA, KENYA, INDIA, CHINA, MALI, INDONESIA, BRAZIL): AN IMPOSSIBLE TASK? CONTRIBUTION OF A TYPOLOGY.

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Résumé :

Evaluating land use policies presents great difficulties. To understand the stakes of land use policies, this study builds on a review of land use policies in selected case studies in seven countries (Tunisia, Kenya, India, China, Mali, Indonesia, Brazil). A total of seventy-four policies were identified in all the seven countries and were characterized with a common template. A typology of land use policies has been defined and applied. The different types of land use policies reflect different conceptions of development that we have characterized by several myths: the myth of the market, the myth of state control on natural resources and the myth of self-management.

Mots clés : land use policy, typology, comparison.

INTRODUCTION: COMPARING LAND USE POLICIES IN SEVEN DIFFERENT CASE STUDIES, AN IMPOSSIBLE TASK?

Evaluating land use policies presents great difficulties. Various angles of analysis can be chosen for the evaluation, such as the focus of assessment, the type of methods, or the relevance of indicators. In Lupis[1], assessment of Land Use policies aims at understanding the contribution of policies to sustainable development, in a more holistic concept, understood as the potential to fulfill new societal goals.

To understand the stakes of land use policies, this study chose to compare seven countries with a great diversity of situations and policies in developing and emerging countries: Tunisia, Kenya, India, China, Mali, Indonesia, Brazil. In each country, a local research team was in charge of selecting a case study on an important land use issue and analyze the policies in these case studies to contribute to a global comparative study. However, it is important to be conscious that carrying out such a comparative study, with a wide range of situations, policies and actors, is a real challenge.

First challenge, the comparison is rendered difficult because a same concept can have different meanings in different contexts and the relevance of a concept used in a context must be questioned in another context. For example, the notions of civil society and democracy are rooted in Western political thought. Can these concepts be applied to developing countries, in the absence of conditions which ensure, in Western societies, the regulation of tensions between individual interests and common good: political rules that are institutionalized and internalized by actors, dissociation between economic and political domains, between the public and private spheres[2]…? (Otayek, 2002).

Second challenge, all research involves a part of subjectivity, assumed or not. This concern is particularly sensitive for issues related to policy analysis. The analysis depends on the representation researchers have of the state, influenced by social norms. In a first case, researchers believe in a strong and beneficent state: in spite of a lack of scientific research on the impacts of the law, the research team postulated that law has positive impacts. Researchers seem to follow the orders of government. In another situation, the role of the researcher is to reveal the limits, the negative impacts of the policies that are implemented and to suggest improvements. A researcher who praises the merits of a law is subject to suspicion within the research community. In the last extreme case, the mistrust of governments accused of embezzlement and corruption is so strong that researchers adopt a defensive position and are systematically critical of policies. These three trends are caricatural, but they point to the fact that social norms must be taken into account to understand and compare research results.

Third challenge, although comparison is often used in research approaches, the mobilized methodology and its formulation are rarely associated with a clearly explained comparative protocol orienting the production and standardization of quantitative and qualitative data. In this case, comparative studies face a risk of absolute relativism, or a risk of globalizing and generalizing abstraction. Searching for continuity/discontinuity leads to face either singular or universal issues. Different methods have been developed to compare land use issues, but several limits can be identified:

- "Synthetic methods" tend to follow a conventional tradition in geography and arrange data within an organizing framework and adding subjectivist commentary.

[1] LUPIS is a European project: Land Use Policies and Sustainable Development in Developing Countries, www.lupis.eu

[2] Even in developed countries, these distinctions are not always clear.

- By contrast, excessive theoretical deduction may lead to a separation from social and political concerns and too much intensive focus on an abstract “homo economicus”
- Neo-Marxist economics or neo-classical economics do not offer a concrete method for studying land use change.
- The approaches of international organizations are regarded as lacking social content or political imagination in their land policy advices.

Facing these different challenges, different questions arise: How to avoid ideological inclination, subjectivist preference? How to select appropriate theories, techniques, methodologies to build relevant results? How to go beyond critics to the different methods (Pugh, 1996)?

To overcome these difficulties, it is necessary to develop a framework to guide the comparison, broad enough to accommodate the different cases, but also adapted to each specific case study. To build such a framework, we have tried to develop a rigorous methodological process, in interaction with the different local partners, based on a common typology. This typology distinguishes four types of land use policies:

- Sectorial policies aim at managing production, by establishing rules on the markets (type 1);
- Resource oriented policies (type 2) establish a management of common resources by the state;
- Social policies (type 3) aim at reducing social inequality by awarding different kind of allowances (social revenue, retirement, pension, etc.);
- Integrated policies (type 4) refer to a collective action with integrated actions on a territory.

This paper presents in part I how this typology was build, then in part II, how this typology enables to compare the different policies and finally, in part III, a retrospective reflection on this typology, identifying different myths that are behind each type of policy.

I A COMMON TEMPLATE TO BUILD THE TYPOLOGY

A typology is a scientific process which consists in defining a certain number of homogenous "types" to simplify the study and analysis of complex realities. A typology must answer two requirements: the types must be exhaustive and exclusive. This means that any individual observation must correspond to a type, and at the same time, only to one type.

Choosing to construct a typology can be motivated by several elements such as a very large set of data or the impossibility to use a unique explanatory model (Grémy, Le Moan, 1977). In the case of Lupis, we are confronted to a very large diversity of policies, which means they can certainly not be taken into account in the same way for the assessment of impact on sustainable development and for the modelling part.

Devising a typology is particularly interesting for comparative studies, as it allows to reveal the most significant elements for the comparison and to give a comprehensive overview (Jollivet, 1965). "*All typification is viewed as consisting in the pragmatic reduction and equalization of attributes relevant to the particular purpose at hand for which the type has been formed, and involves disregarding those individual differences of the typified objects that are not relevant to such a purpose*" (McKinney, 1969). Any kind of typology can be valid, however, it is important to justify it through the objectives it is supposed to achieve.

In Lupis, our objective was to characterize, analyse and evaluate the land use policies diversity, particularly with indicators to understand their different impacts on sustainable development. Therefore, this supposes to underline the elements which will lead to impact differences.

By carrying out a literature review, the specificity of land use policies appears in the combination of three specific components:

- **resources and practices:** land is considered through the resources that are localized on it and resources are considered locally (Callaghan, 1996). This puts at stake a sustainability issue (Haberl et al, 2004): resources existing locally must be preserved for future uses (McCracken, 1998), breaking the productive paradigm which sometimes considered that when resources were depleted, one could move on to another localization (ex: frontier agriculture). Therefore, practices are central: they influence the way resources are mobilized.
- **a wide governance:** governance introduces a wide variety of actors, with different (and sometimes conflicting) interests. This puts at stake a wide variety of issues, notably the ways of taking into account the different stakeholders. This is revealed through methodological development, such as the increasing interest in participatory methods for land use policies (Antunes, 2006; Renn, 2006; Stirling, 2006), or conflict resolution methods to resolve stakeholder disagreements in order to select an optimal land use plan (Prato T., 2007). Exploratory land use studies can accompany the formulation of strategic policy objectives (Ittersum *et al*., 1998).
- **an appropriated space:** space is not just physical, it becomes cultural, an identity emerges, often through the definition of territories, giving a uniqueness to the place regarded (Rocca et al, 2007).

Based on these specific elements, a common template was suggested (Bonin *et al*., 2008), distinguishing elements related to the orientation (what conception of resources), the governance and the scale of the policy (table 1).

	Main Elements	***What must be analyzed***
Orientation	Societal Project	Principal visions dealing with sustainable development
	Objective (and focus)	Production, conservation, development (production systems, resources, territory)
	Dimensions of Sust. Dev.	Economic, environmental, social
	Evaluation and impact measurement	Focus of assessment, methods and tools used, Relevance of indicators, population and area concerned
	Four categories: Sectorial, Resource-oriented, Social, Integrated	
Governance	Role of the government (at all levels)	Orienting, supporting, financing
	Means of implementation	Regulations, incentives, information
	Place of the market	Auto-regulated market, prices influenced by taxes and incentives, prices fixed by the government
	Participation and Mobilization of actors	Communication, consultation, participation Demonstrations of dissatisfaction
	Reality of implementation	Financial means, institutional organization, capacity of the actors
	Monitoring system	Administrative management, participation process, adaptation capacity
	Three categories: oriented by Government , by the market, by the actors	
Scale	Level at which the policy is decided	local, regional, national, international
	Level at which the policy is applied	local, regional, national, international
	Importance of the connection between the land and the policy	Space, localization, consideration of territorial identity
	Four levels: local, regional, national, international	

Table 1: Summary of main elements used to characterize a Land Use Policy (Bonin et al., 2008).

This template was supposed to orient the comparison between different policies. To guide this comparison, a theoretical typology was suggested, distinguishing four types of policies:

- Sectorial policies (type 1), led by government, at a national level;
- Resources based policies (type 2), left mostly to market rules, at a local level;
- Social policies (type 3), led by government, at a national level;
- Integrated policies (type 4), where actors have an important role, at a regional/territorial level.

After this conceptual phase, the next step was to confront the policies found in the different case studies to these “ideal-types”. This analysis was carried out by the local research teams (Cisse et al., 2008; Gachimbi et al., 2008, Purushothaman et al., 2008; Rodrigues Filho et al., 2008; Sartohadi et al., 2008; Sghaier et al., 2008; Shi et al., 2008). In the next part, we will present the different policies that were analysed and how they fit in the typology.

II A GREAT DIVERSITY OF POLICIES: WHAT SPECIFICITIES AND GENERALITIES?

II.1. The different case studies

In each country, a local research team selected a case study on an important land use issue (table 2).

Table 2: Summary of case studies (Bonin *et al*., 2008).

Partner	Region studied	Issue
IER, Mali	Office du Niger	Impact of expansion policies on the co-habitation and sustainability of various production systems
IRA, Tunisia	Oued Oum Zessar	Land degradation
NJAU, China	Taihu Lake Basin (in the Yangtze Delta)	Water pollution
ATREE, India	Karnataka	Agrarian crisis
GMU, Indonesia	Yogyakarta	Land degradation
FUB, Brazil	Road 163	Side effects of infrastructure projects in Amazonia
KARI, Kenya	Narok	Subdivision of land

II.2. Distribution of policies in the case studies

74 policies were identified in the different case studies. Each local partner was in charge of classifying this policy according to one of the four pre-defined types (Table 3).

Table 3: List of policies in case studies classified by type

Type	Name of policies
Sectorial policies	Policies for commercial diversification: National agricultural price policy (India) Policies for commercial diversification: agricultural subsidy policy (India) Policies for commercial diversification: Agricultural trade policy (India) Policies for commercial diversification: Agricultural credit policy (India) Technology mission for oilseeds, pulses and maize (India) Pesticide policies (China) Livestock and poultry policies (China) The 11th five-year plan for the construction of modern agriculture in Jiangsu province (China) Non-pollution food, green food and organic food policies (China) Regulation of the management of non pollution agricultural products in the Jiangsu province (China) Agricultural policies in the Jiangsu province (China) Infrastructure: road building and pavement (Brazil) Infrastructure: Hydroelectric power plants (Brazil) South American Infrastructure Integration Initiative-IIRSA (Brazil) Agriculture culturing system (Indonesia) Forestry (Indonesia) Policy of Eternally Agricultural Land (Indonesia) Strategy for Revitalizing Agriculture (Kenya) Macro-economic policies (Mali)
Resource-oriented policies	Land reforms (India) Land acquisition (India) Watershed development policy (India) The water law (China) Soil and water conservation law (China) The 11th five year strategic planning for water pollution prevention in the main watersheds (China) Water pollution prevention and control law (China) Lake protection regulation of Jiangsu province (China) Water resource management regulations of Jiangsu province (China) Regulation on water pollution prevention and control in Taihu Lake in Jiangsu province (China) The tenth five-year scheme of water pollution prevention and control in the Taihu Lake (China) Regulation of water permits and the collection and management of water resources fee (China) Zero-clock action (China) Prevention and control of environmental pollution by solid waste (China) Land property rights (China) Protected land: conservation (Brazil) PP-G7/ Pilot program to conserve the Brazilian rainforest (Brazil) Action plan for Amazonian deforestation prevention (Brazil)

	Basic regulation of agrarian (Indonesia) Land arrangement for public facilities (Indonesia) Environmental management (Indonesia) Land tenure policy (Kenya) Water policy (Kenya) Land use code (Mali) Legal texts regarding forest, fauna, water resources (Mali) Water code policy (Mali) Land expansion and privatization policy (Mali) Water and soil conservation strategies (Tunisia) Saving water and irrigation encouragement policy (Tunisia) International convention on climate change (Tunisia) United Nations convention on combating desertification (Tunisia) UN convention on biodiversity (Tunisia) Privatization policy (Tunisia) Environmental policy (Tunisia)
Social policies	National rural Employment Guarantee Act (India) Public distribution system (India) The strategic framework to fight poverty (Mali)
Integrated policies	The Panchayat Raj Act (India) Regional development acts and authorities (India) Town and country planning act (China) Land administrative law (China) The development plan of circular economy in Jiangsu province (China) Ecological province construction plan of Jiangsu province (China) Protected land: Indigenous land (Brazil) Colonization and land reform (Brazil) Sustainable BR-163 plan and sustainable Amazonia plan (Brazil) National Spatial planning (Indonesia) Regional Spatial Planning Province of Yogyakarta (Indonesia) Disaster anticipation (Indonesia) Wildlife and tourism policy (Kenya) Arid and semi-arid lands policy (Kenya) Laws on decentralization (Mali) Rural development sector master plan (Mali) Setting up the Agency of the Niger River (Mali) Rural development policy (Tunisia)

Resource policies are the main type of policy identified in the case studies of the LUPIS project. This type gathers 46% of land use policies (Figure 1).

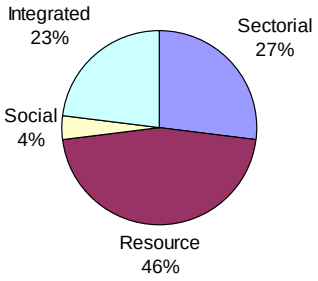


Figure 1: Distribution of land use policies according to types

This trend is driven by the case studies where the central issue relates to resources, particularly China with water pollution and Tunisia with land degradation (Figure 2).

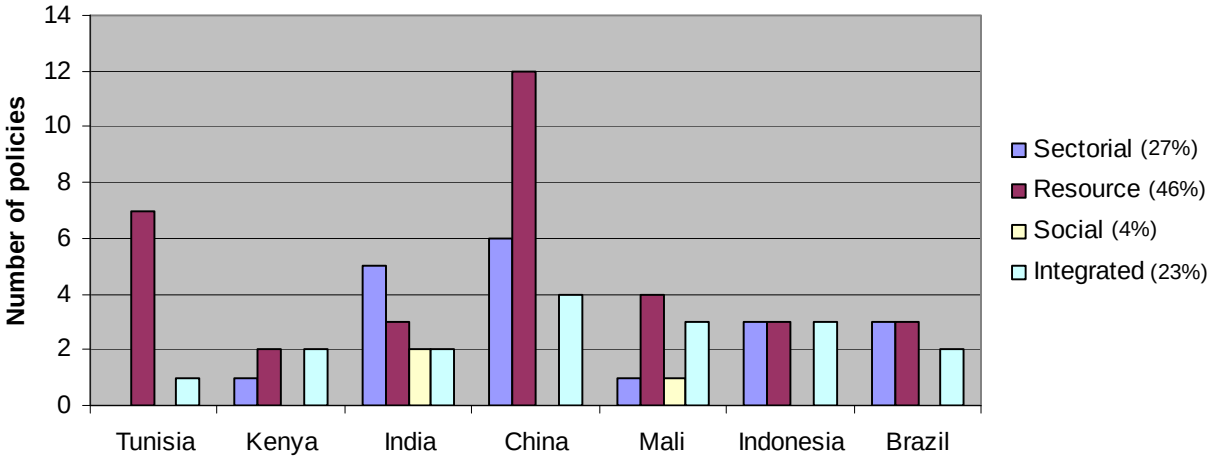
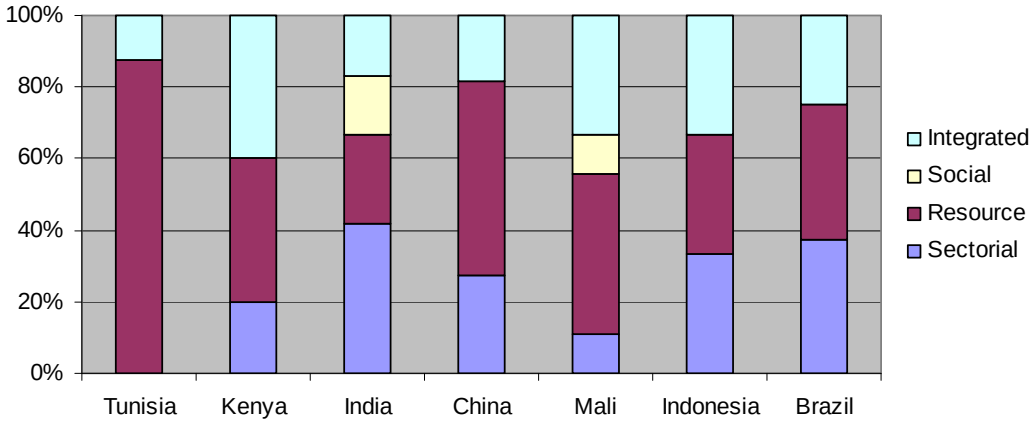


Figure 2: Number of policies in case studies classified by type

Figure 3 shows a more balanced distribution between the different types in the other case studies.

Figure 3: Percentage of policies in each type for each case study



In most case studies, policies are well distributed among the different categories. Does this typology help in understanding the diversity of policies implemented ? Is there truly a coherence behind this classification ? In the next part, we will analyse the specificities and generalities of the different groups of policies, to see whether the typology is relevant.

II.3. The orientation of policies

The orientation of policies was the main determinant of the conceptual typology. Confronted to the reality of the policies, is this separation still relevant ? We will describe rapidly the different policies in each category to see whether they are similar and can be considered as a common group.

II.3.1 Sectorial policies to encourage agricultural intensification

All the sectorial policies described in the case studies seem to be related to agricultural modernization, although they propose different modalities according to case studies.

The degree of agricultural intensification varies according to countries. Policies have encouraged cultivation of input-intensive commercial crops during the “green revolution” in India for example or have contributed to the establishment of an area of irrigated crops in Office du Niger.

As a result of promoting agricultural intensification, India has doubled its food production during the 1970s and has reached net surplus in food production. This process is named ‘green revolution’ wherein increased production in food grains was achieved by increasing acreage of land under High Yield Variety (HYV) seeds of Paddy and Wheat, with resource intensive, irrigated agriculture. More and more land was ploughed and most arable land was converted to agricultural land. Considering the resource-intensive nature of the green revolution, policies related to irrigation and watershed development have had a considerable impact on decisions concerning the type and number of crops grown in a year. To foster growth in agriculture, various government agencies were involved in the marketing of agricultural inputs and outputs. Agricultural price policies, as well as minimum support prices, were devised to provide incentives to farmers to adopt new technologies and use crop patterns that are socially desirable (GOI 1965). These reforms were presented as necessary to sustain the growth in food production and sectoral policies form the majority of policies affecting agriculture in India (Purushothaman *et al*., 2008).

In Taihu Lake Basin in China, the population density is high, the level of urbanization ranks as the first in China, but this area has limited arable land. In order to meet the food demand of such a huge, growing population, agriculture has become extremely intensive by using inorganic fertilizers and pesticides to increase crop productivity. The demand for livestock and poultry products is high. A great number of livestock markets have emerged within the suburbs. Intensive livestock production has had a tremendous impact on the environment. In addition to the livestock pollution, aquaculture also produces much pollution. The development of fence farms results in the eutrophication and the decline of the lake purification capacity. A large amount of feed is used in fish farms, but only 30% of it is consumed and the rest ferments in the sediment. Within the 30% of feed that is used, only 9% of nitrogen and phosphorus are used, the rest is excreted into water (Xiaoping *et al*, 2008).

These policies have all emerged to encourage food production, but have often been implemented without any thought about the negative consequences of agriculture modernization (brought by these policies) on natural resources.

II.3.2 Resource-oriented policies mainly to face the negative consequences of agricultural intensification

Although environmental degradation is outlined in many countries (India, China, Mali, Kenya, Tunisia), the implementation of policies to address these environmental issues is dealt with unevenly.

In China policies clearly tackle the negative consequences of agricultural modernization with resource-oriented policies which focus on water pollution prevention and control, as well as with sectorial policies related to agriculture (pesticide policies; livestock and poultry policies; non-polluted food, green food and organic food policies; regulation of the management of non pollution agricultural products…). However, contradictions in policy objectives may jeopardize a good implementation. On the one hand, the non-pollution, green and organic food policy forbids using chemical fertilizers and pesticides, in the same way as the pesticide

policy, but on the other hand, the agricultural policy may indirectly encourage the use of the chemical fertilizers and pesticides. Thus policies conflict with each other. The plan of circular economy, the plan for the construction of modern agriculture and the plan of ecological province can be considered as a way of solving this conflict. These three policies offer a scientific regulation about how to develop agriculture, economics and the environment (Xiaoping *et al*, 2008).

In India, Karnataka's agricultural sector is considerably affected by deteriorating environmental conditions, specifically related to intensive use of agricultural inputs. This situation is exacerbated by the complex set of policies affecting agricultural resource use and the lack of an integrated policy to reduce resource degradation. In most instances the government has given little importance to interventions for reducing resource degradation. Even in cases where resource degradation is recognized as a major setback towards agricultural development, analysis and monitoring mechanisms like setting up soil testing labs, extension mechanisms (Swaminathal et al 2006) and issuing soil quality cards (GOK 2006) which in most cases are based on voluntary participation, no influential policy exists to tackle the alarming resource degradation (Purushothaman *et al*., 2008).

The trend of intensification of livestock is raised in Mali. In China, the demand for livestock and poultry products is large. Large number of livestock markets emerged on scale in the suburbs. Intensive livestock production had a tremendous impact on the environment. These consequences, which may be very different, given the difference in context, are not mentioned in Mali.

In Amazonia, the linkages between agricultural policy and environmental policy seem to be the juxtaposition and dissociation in space. Policies to manage the negative environmental externalities of the modernization of the farmers are not mentioned. The policies implemented in the Amazon are considered by some authors as an endorsement of policies elsewhere: the distribution of public land to poor peasants was considered as an escape valve for social unrest that had been building up elsewhere in the country due to land concentration. In the beginning of the 1970´s, the military government initiated the Plan for National Integration, PIN (Plano de Integração Nacional) followed by other land policy incentives, seeking to occupy the empty spaces of the area deemed to be the "Legal Amazon " (Amazônia legal) and to reduce the social tensions generated by the modernization of the agriculture in other areas of Brazil (Rodrigues-Filho *et al*., 2008).

The strength of environmental policies in front of the market "laws" may be questioned. In China, the role of industries that produce pesticides is central for the effective implementation of policies to regulate the application of pesticides. Policies against deforestation in the Amazon have to face the force of international timber trade. This suggests that Market based instruments or a strong state to make the command and control efficient are necessary.

Deforestation is the main issue and the main focus of policies in Amazonia.

This problem is also mentioned in Indonesia and in India. In India, cases of land encroachment in forest peripheries are frequent (GOI 1988, Aziz & Krishna 1997). Instead of tackling the problem of encroachment head-on, successive governments frequently 'regularise' illegal encroached lands and constructions, encouraging further encroachments (Purushothaman *et al*., 2008).

In Mali this problem is associated with wood availability.

Surprisingly, in China, in spite of a high economic growth, tree cover increased quickly due to a direct intervention of the government for the replanting of forests with environmental objectives (fight against pollution, erosion ...).

II.3.3 Land use policies and inequality

Although they have been little mentioned in the case studies, some land use policies are designed to address social inequalities.

In India, land reforms were started during the 1960s and had varying success in the different states. These reforms conformed ownership rights of agricultural lands to tenants, put ceilings on size of agricultural land that can be owned (land ceiling) and redistributed the surplus lands from large holders to landless in the country. These reforms can be treated as precursors to the Green Revolution. The government took a proactive role of designing, implementing and monitoring the policy of land reforms. Land reform was an important step in creating equitable distribution of agricultural land among the people. It also gave social and political voice to the landless tenants. Where they were implemented effectively, land reforms increased the number of land holders and decreased the size of the average land holding per farmer. Many studies claim that land entitlement, increased tenure security and decreased size of average land holding may help in reduction of fallows and increased the productivity of the land. But the hypothesis that redistributive land reforms can increase agricultural productivity has been questioned increasingly in the liberalization regime and instead the case is often being made for economies of scale, consolidation and relaxation of ceiling on land ownership (Deshpande 2007, Srivastava 2006).

Social policies mainly focus their activities on the poorest: National rural Employment Guarantee Act and Public distribution system in India, the strategic framework to fight poverty in Mali.

However, land use policies also contribute to build or widen inequalities between farms. In China, with the implementation of the livestock and poultry policy, many small and medium livestock and poultry farms changed their way of livestock and poultry. Some small farms which can't reach the standard must close.

II.3.4 Integrated territorial policies to address inequality between regions?

It seems like one of the main objectives of territorial policies also address inequalities, but not so much within a specific region as between different regions.

Several policies aim at correcting territorial disparities: the policy "Regional Development Acts and Authorities" in India to establish special area boards puts increased focus on areas lagging behind in socio-economic indicators.

Some territories concentrate financial resources. In India, inter-region and intra-region disparities in agricultural productivity and growth are high. Investment in infrastructure is higher in well irrigated and fertile areas (Fan & Hazell 2000). Rain-fed agriculture (which comprises of 2/3rds of the total agricultural land in India) lags behind both in capital formation and agricultural production (Kerr 1996, Mathur et. al 2006).

The area of Jeffara presents a great socio-economic and geopolitical interest in Tunisia, profiting from a significant volume of investment through several national development programs, such as, the Integrated and Rural Development Program (PDRI), the Regional Development Program (PRD), the National Solidarity Program, the Natural Resources Management Program (Sghaier *et al*., 2008).

Agriculture intensification, modernization increase economic growth, social welfare, as well as inequalities and environmental degradation may all be addressed within an integrated program. In Brazil, BR-163 is the only way of communication for the local population and at the same time is also vital for the transport of agro-export products. Companies focusing their operations on the purchase of grains and sale of fertilizers to rural producers are accused of deepening the dependence of these producers on the large companies of the

agricultural sector. On the other hand, companies that market agrochemicals, agricultural machines and agribusinesses, invigorate the local economy.

Analyzing the orientations of the different policies confirms the relevance of conceptual typology. Therefore, to compare policies, this criteria is helpful.

II.4. Governance and scale of policies

When we suggested the conceptual typology, our hypothesis was that each type of policy corresponded to a certain type of governance. However, the case studies show that the governance depends on the overall national system. Three contexts can be distinguished: the state governance is strongly criticized, alternatives to state governance emerge, or the state still appear as the main governance actor.

II.4.1 Critics of a state governance

The withdrawal of the state is advocated by international institutions (World Bank and IMF) since the "Washington Consensus" since the eighties and guided the development of guidelines for nearly 20 years. In recent years, the relevance of the withdrawal of the state is questioned (Stiglitz, 2002).

Several countries have experienced in the recent past a transition from military government (for example Brazil and Mali).

Criticism of the post-colonial state authoritarianism was justified by the donors concerned about the use of aid, often misused for patronage or fraudulent. This criticism of the authoritarian state imperceptibly led to criticism of the state as an institution, condemned as useless, corrupt, bureaucratic, that spends too much money (Otayek, 2002).

The state is accused of being either too present or not enough present.

In Amazonia, the inefficient presence of the state is denounced. Corruption occurs on several institutional levels, including inspection institutions and positions of state bureaucracy.

In Kenya, under the constitution and the Trust Land Act, County Councils were supposed to hold trust land on trust for residents but the council and the government have favoured affluent people (Gachimbi *et al*., 2008).

In India, the analysis of land reforms shows that in general, giving ownership of agricultural land to its tenants and landless was successful. However, land ceiling and redistribution of surplus land was marred with inefficiency. Also, in many areas, the powerful land owners sabotaged the whole process. Concealed Tenancy (cases of unreported tenant farming) still exists. This can be directly attributed to corruption and lack of willingness in the lower ranks government.

Land use policies in the Amazon are usually designed and applied in a rather uncoordinated way by several agencies and line ministries. Those plans considerably overlap. In India, lack of enforcement, poor record keeping, corruption, unclear distribution of responsibilities are also indicated. In China, The Water pollution prevention and control law of the People's Republic of China (WPPCL) is not effectively implemented and has not achieved its initial goals. First of all, the quality of water environment has not been improved. Second, the implementation of the WPPCL was extremely difficult. Third, there are serious conflicts of various interests. Meanwhile, there are some dilemmas in the WPPCL. Now, the Chinese authorities are amending the WPPCL, where most of the thoughts are focusing on how to further improve watershed control, strengthen centralized management and enhance the measures in executing the law. However, the law is formulated to deal with the

consequences of the pollution, while not the actors who cause the pollution. Therefore, the WPPCL can not coordinate and balance different interests. The appropriateness and enforceability should be explained with doubts (Xiaoping *et al*, 2008).

This inefficient presence of the state results in “policy in paper” without any real implementation. In Amazonia, many of the proposed actions have never been implemented. In Indonesia, the reality of policy implementation shows an insufficient application.

II.4.2 Alternatives to state governance

Questioning the state benefits:

1. Private initiative, promoted in the structural adjustment plans in the context of disengagement of the state
2. The informal sector
3. Associations or other "grass roots organizations"
4. Growing capacities of local governance and municipal governments

The disengagement of the state, promoted in the structural adjustment was reflected for example in Mali through a privatization of the rice sector, from production to marketing. The promotion of private initiative is still valid as shown by the participatory management programs.

The inefficient presence of the state gives way to illegal practices, for example illegal logging in Amazonia or in Indonesia. In Amazonia, institutional barriers such as the inefficient presence of the state and failing communication between the land registry system (INCRA, Instituto Nacional de Colonização e Reforma Agrária – National Institute of Colonization and Land Reform) and the legal registry system (Registry offices) is facilitating the actions of the land grabbers', favouring the illegal occupation of public lands, the creation of clandestine highways and deforestation (Rodrigues-Filho et al., 2008).

The promotion of associations or other "grass roots organizations" is not mentioned in the inventory of the policies carried out. The formalisation of « bottom-up » community involvement in projects has been driven from past failings of « top-down » approaches. The push for community participation in sustainable development initiatives can be seen in Tunisia and in Mali. The situation remains deeply different in China where means of implementation, particularly for sectorial policies are qualified as “force to obey”.

Example of growing capacities of local governance and municipal governments can be found in Amazonia. State and municipal governments are working together to strengthen local institutional capacity for environmental planning and regulation, while also learning how to integrate local stakeholders into the planning process. In recent times, the government attempts to pave the unfinished parts of the road; committees were created to discuss the matter, with diverse civil, private and social actors; they all strive to find a solution among the land use conflicts.

II.4.3 The essential role of the state

Despite all the criticism of the state, its primary role remains outlined.

In India for example, Special Economic Zones (SEZ) are allocated areas created to provide autonomous, incentive providing environments for private enterprises to establish their industrial units in a specific region of the country. The question of rehabilitation and compensation is also very important with SEZs. Until recently, there were widespread

protests against the government trying to acquire land to establish SEZs. But, recently, the Karnataka government has announced that the government will not acquire land for SEZs and will leave it to the private companies to buy land from the people openly. It has also announced new compensation and rehabilitation packages to those who will lose their land. While the land acquisition act of the government itself was flawed with controversies, allowing comparatively stronger private enterprises to deal directly with farmers and land holders raises the question of social justice. In such situations, the role of the government becomes vital in ensuring equitable benefits for all stakeholders (Purushothaman *et al*., 2008).

This major role of the government is also declared in China where land property rights differentiate ownership subject and tenure subject. The ownership of land belongs to the communities or state. The state has to consider all factors such ecological environment, human welfare and economic to plan how to use the land. This is considered as a way to change the condition of abusing and use unreasonably land resource (Xiaoping *et al*, 2008).

If the state is sometimes accused of inefficiency, the very concrete actions implemented by the state are also highlighted. For example in China, within the policy about “Lake protection regulation of Jiangsu province”, for the silt of lakes, different local government plants some water clean plants such as eichhornia crassipes, and breed some macrobenthos and fish. This is considered as useful for the lake environment. Within “Water resource management regulations of Jiangsu province”, 4745 deep wells were closed to protect the grounwater. The main objective of Zero-clock activity is to effectively control the eutrophication process of the Taihu Lake and reduce the Taihu Lake water pollution. To achieve this objective, until Jan. 1999, the local government forces 24 industries to close, 29 industries to adjust and stop production because the pollution is over the standards. The action of closing and adjusting the polluting industry reduced the water pollution and decline the eutrophication (Xiaoping *et al*, 2008).

Therefore, governance appears more as a contextual element than as a component of the policy. To compare policies, it is an important element, but between countries, not between different types of policies within a same country.

The object of the typology was to classify policies and understand the different impacts they had in terms of land use.

III VISIONS OF SUSTAINABLE DEVELOPMENT BEHIND EACH POLICY

It appears like the typology of policies mainly depends on the orientation of the policies. This orientation is greatly influenced by different visions of sustainable development. We will first present how these visions make different hypotheses concerning the possible impact of each type of policy. However, as we discuss after, these hypotheses are based on different myths and not on assessment studies, which reinforces the controversy between what type of policies to implement in a given situation.

III.1. The impact of land use policies: an object of controversy

Each type of policy has been developed within a specific vision of sustainable development, with specific assumptions.

The type 1 (sectorial) takes into account mostly the economic component. The justification of these policies will probably include the three components of sustainable development but in

practice, effects are on the economic part. The rationale behind these policies is that economic development will automatically enable social improvement and environmental preservation.

The type 2 (resource-oriented) and type 3 (social policies) both emerge from the observation that the type 1 policy does not always have such positive by-products and that it may be necessary to compensate its negative externalities, and devise policies which have a direct effect on the environment or on social welfare. These policies are sometimes accused of focusing on only one aspect: for example environmental policies for protected areas which do not take care of indigenous population; or economic policies such as land reform policies, which increase pressure on land and therefore can be harmful to the environment. Conversely, some authors argue that environmental and social activities will create economic activities.

Types 1, 2 and 3 have in common a focus on only one dimension of sustainable development. Type 4 (territorial policies) differs, as it relates to all the three dimensions of sustainable development. The difficulty is to manage to find the appropriate balance between the three objectives. If devising and implementing these policies is devolved to actors at regional or local level this can allow the policies to remain more flexible and adaptable to each context, in order to achieve an optimal balance to promote the three components of sustainable development.

In all cases, a lack of knowledge about real policy impacts can be noticed.

In China, systematic control, scientific research and corresponding supervision are very limited in dealing with the hazard of pesticide use. Although with the implementation of these regulations, as well as the development of organic agriculture, the amount of highly toxic pesticides used has decreased greatly. However there is very little research on the effect of policies on water and land resources (Xiaoping *et al*, 2008).

The impact of policies is also often subject to controversy. In 2005 and 2006, deforestation rates significantly decreased in Amazonia. However, a follow up study conducted by Greenpeace showed that the successive budget cuts, as well as lack of coordination rendered the plan ineffective. Yet, the Federal Government claimed credit for the decrease in deforestation rates in the last two years. Apparently, deforestation dropped due to macroeconomic policies (over evaluation of the Brazilian currency – Real – vis a vis the American Dollar) and falling prices of both soybeans and beef. It is difficult to identify the specific impacts of a single policy, since the decrease in deforestation rate results from various drivers, including macroeconomic policies. The impact of the plan is the object of a controversy (deforestation rate related to the action plan or to macroeconomic policies?). Policy impact is the object of a debate and the occasion to express tensions between different point of view and actors (Greenpeace, Federal Government…).

In India, the economic reforms that started in the 1990s included liberalized international trade and foreign direct investment policies together with a gradual removal of public sector monopolies. These policies have affected agricultural land use significantly, although there is still a debate as to the impact of international trade agreements and globally agreed commitments like Convention of Biological Diversity and the Kyoto protocol. Many studies claim that forums like the WTO have not had the kind of impacts that were hypothesized on Indian agriculture although their role is being watched carefully (Balakrishnan 2000, Chand 2004, Sathe & Deshpande 2006). However, the process of market liberalization in India has had measurable changes in the Indian economy in general. Rapid urbanization, increasing use of land for non-agricultural purposes, commercialization of agriculture, volatility in demand for commercial crops are some of the issues of land use change connected with it (Purushothaman *et al*., 2008).

Impact assessment of the different policies often seems biased, and to be able to analyze the contributions of these studies, it seems important to understand the myths behind each type of policy.

III.2. Sectorial policies: the myth of the market. Integrating social and environmental functions in market rules

These policies aim at managing production by establishing rules on the market. The centrality given to the market is associated in developing countries to structural adjustment plans imposed by multilateral financial agencies such as the International Monetary Fund and the World Bank advocating a withdrawal of the state If the trend is towards liberalization of trade, government intervention remains either directly on the production as it is the case in India for example, or decoupled from production targets (in Europe for example). The European Union is characterized by substantial levels of agricultural protection. Government payments are considered as payments for services rather than as subsidies (Hodge, 2007, p.411): "*The UK government is unambiguous in its stated aim for liberalisation of the Common Agricultural Policy (CAP) (HM Treasury and Defra, 2005). It argues (p. 9) that agriculture should be 'rewarded by the market for its outputs, …, and by the taxpayer only for producing societal benefits that the market cannot deliver'. Thus government payments are to be seen as payments for services rather than as subsidies*". This payment for ecosystem services is in debate for agriculture in Brazil and in China.

This approach draws on governance rather than assuming a model of policy being applied to profit-maximising firms and consumers with fixed preferences: "*governments set the scenes within which exchanges take place, by establishing formal rules for transactions, by constraining and incentivising behaviour, and by creating less formal forums within which information is exchanged and policies are implemented*" (Hodger, 2007, p.410).

III.3. Resource-oriented policies: the myth of state control over the management of natural resources or common goods

The management of common resources by the state, in a top down approach can have an authoritarian and sometimes radical character (removal of thousands of wells, prohibition of industries to reduce water pollution in the most urbanized and industrial China for example). However, it must cope with problems of governance of diverse interests and power relationships between actors. It is common to assume that the focus of government intervention on the common goods applies mainly to natural resources. This is indeed the case in China about the pollution of water and Brazil with the fight against deforestation. We note, however, this type of intervention in the social field (food distribution by the Indian state to ensure food security for the population).

"Conservationists" approaches advocating policies of nature are sometimes accused of considering human communities as "destructive agents" to be removed from natural environments.

In contrast, conservation policies are sometimes perceived as "skins" of sectorial policies. In Amazonia, conservation policies in the text are seen by some as a settlement in practice.

Integrated conservation admits co-habitation of societies and nature. Social factors are taken into account in policies for the conservation and management of nature.

III.4. Integrated and territorial policies: the myth of the self management

III.3.1 Empirical and theoretical origins

The work of Berkes (1989) and Ostrom (1990) founded a school of thought in the field of institutions in the management of renewable natural resources. These authors were opposed to the theory of the tragedy of the commons by Hardin (1968) who sees the common resources as free and doomed to disappear as overexploited necessarily by their users whose interest is not to save the resource if others do the same. According to Hardin, the only centralized management by the state or private property are essential to ensure the renewal of such resources.

One of the flaws in the reasoning of Hardin according to Ostrom (1990) is to have neglected the importance of customary institutions through which in many situations, access to shared resources is not free but regulated by a set of rules in place and recognized by local actors (Barnaud, 2008). Here is one of the origins of the fourth type of policy.

Its origin is in the questioning of the centralized management of resources by the state. The self-management is constructed as a movement to mobilize in reaction against the centralized management. In southern countries, these policies are based on criticism of the state post-colonial authoritarian mentioned above.

These policies refer to a myth, that of collective action, integrated on a territory both claiming (self-management, local development) and institutionalized (rural development programs in Europe, Tunisian ..., decentralization).

These approaches meet the policies of rural development (Ploeg *et al*., 2002) and of decentralization which envisioned that local governments are better equipped to understand local problems and the development needs in their own locality and hence can implement and monitor development projects in their area more effectively than a hierarchical centralized government (as it is the case in The Panchayat Raj Act in India).

Population initiatives, regardless of external institutions, are valued. External institutions are requested to get the resources and technical advice they need, but people are masters of use of resources.

Agricultural economists join these approaches by their desire to expand their field of work. They focus their attention beyond the policies for agriculture, towards the governance of rural land : "*This requires a new approach towards the management of the rural environment that relies less on central government direction and more on an integrated approach across different types of organisation at a more local level. It also implies a more interdisciplinary or 'thicker' analysis (Adger et al., 2003), drawing on a range of methodologies*" (Hodge, 2007, p.410).

III.3.2 Its limits, its dilemmas

This myth is facing difficulties: the relationship between collective action, participatory, endogenous and institutionalization in the local and international programs (such as project Leader in Europe).

Examples where the benefits of participatory development projects or policies of decentralization are bought by local elites are often advanced (Barnaud, 2008, p.28).

Blinded by the myth of a homogeneous community, the risk is the reproduction and even the increasing differences of power inherent in communities where the actions are implemented.

Focused exclusively on local actors, the process of self-management may generate proposals for solutions that will not be implemented due to a lack of institutional support at higher levels.

Some authors advocate greater reliance on the village representatives, institutional interface between communities and governments at higher levels. Often products of the local elite, the risk of reinforcing existing inequalities in the community remains (Barnaud, 2008).

Integrated policies carried out in Indonesia (spatial planning) and India (the Panchayat Raj Act) face the challenge of asserting an authority on the one hand, linking up with the pre-existing sectorial logic on the other hand.

For example, in India, though Karnataka is ranked among the top decentralized states, it has not been able to sufficiently empower all PRIs (Panchayat Raj Institution). There are very few PRIs that have actually realized their full potential. This imperfection allows complacency and corruption to creep in, further weakening the PRIs forming a vicious cycle. This also results in PRIs becoming redundant. That is, other vertical line departments (like the dept. of agriculture) carry on with their older centralized scheme of work as before. In some situations, this may also result in PRIs themselves becoming the bone of contention between different line departments. In cases where PRIs are strong, they create alternative governments and horizontal power points, often clashing with the authority of vertical line departments. For example, many Gram Panchayats (village level PRIs) in Karnataka have succeeded in implementing sanitation programs, plastic-free campaigns, literacy programs, establishing women's self help groups, adopting environment friendly agriculture etc in places where the respective departments in the state government had not necessarily succeeded in such programs.

Another example in India is the case of Regional development Acts and Authorities whose aim was to focus actions on areas lagging behind in socio-economic indicators. However, a few panels appointed by the state government to study regional imbalance in development have suggested that such boards have not been significant in contributing to the overall development of their respective areas. The establishment of special area boards adds to the large government machinery already existing in the state. Together with numerous schemes from various line departments and the PRIs, these boards add one more layer of government interventions for development. This may create disorder in terms of coordination between the different arms of the government thus delaying the planning and implementation of the proposed development packages (Purushothaman *et al.*, 2008).

CONCLUSION

While acknowledging the difficulties of the comparison of land use policies in such different case studies, a template to characterize land use policies and a typology helped us to identify singularities and generalities regarding the analysis of land use policies in Lupis case studies.

The application of the typology of land use policies shows that Resource-oriented policies are particularly dominant in case studies where the selected issue deals with resource management (water pollution in China, land degradation in Tunisia). The different types of land use policies reflect different conceptions of development that we have characterized by several myths.

Beyond oppositions between governance of the state, the market, the informal sector or local governance and municipal governments, we can notice the emergence of mixed configurations between state, market, NGO, municipal governments…; mixed configurations from socialism to market capitalism. International institutions are part of these mixed configurations. What kind of governance can be developed combining a respected state, the

dynamism of the private sector, and the expectations and initiatives of civil society? How to articulate actions and actors at different levels? Creativity and innovation are needed to address these challenges.

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