



Land system dynamics in the Mediterranean basin across scales as relevant indicator for species diversity and local food systems

WP4 - LAND SYSTEM DYNAMICS ASSESSMENT AT LOCAL SCALE | DELIVERABLE REPORT

D4.3- REPORT ON POSSIBLE ADAPTATION PATHWAYS FOR THE LOCAL AREAS TO INCREASE RESILIENCE OF FARM SYSTEMS, LAND MANAGEMENT AND LOCAL FOOD SYSTEMS

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Pathways of development

From the 7 case studies, 5 conducted the methodology of the territory game. This participatory approach invites territorial actors to reflect on the current state of the region in study, its possible future development and possible actions to prevent or promote a desired future. The methodology is guided by a question. In each of the case studies a similar but adapted question was posed, which were:

- *Which achievable transitions towards resilient farm and food systems that will guarantee the protection of biodiversity?* In Comtat Venaissin (France)
- *Which farming systems to feed the city?* In Pisa Plain (Italy)
- *Which agricultural practices should be favoured to prevent desertification and strength local commercialization of agriculture products?* In Serpa, Mértola & Alcoutim (Portugal)
- *Do the changes in the agrarian system contributing to move it closer to local markets? And do they have beneficial or harmful effects on biodiversity? Which economic alternatives can be developed at local level to reinforce the local agrarian sector?* In the region of la Vega (Spain)
- *What transformations of farming systems and land management can foster the links between sustainable food systems and the preservation of natural resources?* In Haouaria Plain (Tunisia)

Interviews were conducted in all the case studies, and it was asked to the participants their projections for the future of the territory. Namely, interviewees were asked:

- If they consider that in 30 years from now farm systems will be maintained. What changes do they foresee? What are the reasons for those changes?
- If they could change the future, what would they like to see in 30 years' time? What don't they want to see? The same farm systems? Others? Different combinations or different relevance levels?
- What are the constrains and the enabling factors for the visions?

Data from the two methodologies were combined so that we have an overall understanding of “foreseen future” and “desired future” for all case studies, and possible actions for those that played the territory game.

1 Desired Future

There is a coherent desire of a future with a higher investment in the transformation and commercialization sector, together with the strengthening of the local market. Simultaneously, there is a wish of multifunctionality, usually reminiscing of more traditional systems. Indeed, in Pisa Plain (Italy), and the la Vega region (Spain), it was dimed that beyond protection, the resurgence of disappearing traditional systems (fruit orchards in Pisa, and extensive livestock and fruit orchards in Spain) was desirable.

There is also a desire of preservation and protection of resources, namely of agricultural land from both being lost to urbanization in the case studies where urban pressure is higher, and to degradation in the Portuguese case study. In the case studies where demographic pressure is higher, such as the case of Pisa (Italy), Comtat Venaissin (France), Malta and the region of la Vega (Spain), territorial planning and limitations on construction and industrial exploitation are thought important as these are pushing for loss of agricultural land and fragmentation. Simultaneously, it has been expressed a wish for the revitalization of rural areas, either through tourism projects (Italian case study), the fixation of population (Italian and Portuguese case studies) or the investment in increased mobility to and from the territory (French and Portuguese case studies).

An increased cooperation between actors was expressed in almost all case studies. Maybe because of the higher organization between farmers in the French and Italian case studies (see D4.2), this was not made explicit.

Information about desired future is summarized in table 1.

Table 1 – Summary of desires expressed by stakeholders for the future development of the case studies

Desired future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Diversification of land systems		Promotion of diversified farming systems / promote complementarity between cropping and breeding	Diversification on farm system and farm level, (old multifunctional farm model instead of monoculture)		Diversification of cultures and land systems	Diversification of agricultural land uses and landscapes Multifunctional farm model: mixed crops and fruit trees.	increase crops productivity and the storing facility / arboriculture or increasing livestock / shift to organic farming.
Protection of natural resources	Better management of natural resources (water and soil).			Protect Soil	Restauration and improvement of soils Valorization ecosystem services	Valorization of natural resources and spaces by society and administration.	Proper water governance -

Desired future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Preservation of land systems		Protection agricultural land Limit Urbanization Preservation of peri-urban farming	Recover also fruit orchards Preservation of typicality Vivid olive crops, with a modern system	Safeguard current systems Limit urbanization	Promotion, maintenance, and improvement of multifunctional systems Re-introduction of indigenous species	Resurgence of olive groves, livestock production, and pastures and fruit groves	Preservation of forest
Investment in the transformation /commercialization sector	Investment in the agricultural processing industry. Development of conditions for the export of agricultural products	Further complementarity/hybridization between local commercialization and exportation Local food processing Change habits of consumption - incentive buying local	Niche products	Foster tourism	More transformation facilities in the territory	High-quality label (for olive oil)	New channels for sale of products and delivery of farm inputs. Shift to organic farming that would be better in terms of economic revenue and environmental conditions
Strengthening of local food chains			Local transformation Feed the city with local agricultural production	Create more appreciation for local food	Self-sufficiency - Easiness to place local products in the market and in public canteens	Promotion of local products and short channels. Creation of reference brand Invest in gastronomy industry	improve quality, new market infrastructure for farm services, including channels for sale of products and delivery of farm inputs, as well as provision of extension, training, and advice services.

Desired future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Revitalize rural areas		Develop and promote alternative mobility	Aggregation of the fragmented farms Projects on sustainable tourism Reinforce the connection with the city Repopulation	Prevention of further land fragmentation	Increase mobility and connectivity to combat marginalization and isolation Repopulation		
Local adapted management			Subsidies for good practices (maintain the hydrogeological structure) Local policies on land use and urbanisation, agriculture, agritourism	Applying farming systems that consider the characteristics of the Maltese environment	More benefits for farmers that adopt “good practices” Adoption of “water seeding” practices such as ponds and swales to retain water in the land Adapted agrarian and development policies to extensive, rainfed depopulated territory Flexibility in impositions within natural parks	Territorial respectful production, more sustainable Transition to an organic production	

Desired future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Coordinate actors	Better involvement of all stakeholders Accompaniment of farmers			Organization of framers in cooperatives or associations	Consolidate network and cooperation amongst actors at different levels Organization of producers in cooperatives or associations Creation of a territorial label Planning of cultures and practices in accord to edaphoclimatic characteristics Divulgation of knowledge amongst farmers and decision makers	More cooperation amongst small producers	Training and empowerment of farmers as well as provision of extension, training, and advice services for the small private farmers

2 Foreseen future if nothing changes

There is a generally pessimistic perception on the development of the land systems if current trends remain unchanged. Main issues relate to expected increased pressure over the natural resources, related to intensification and inadequate development policies, but also to land abandonment. These would decrease land system and landscape diversity with consequences for biodiversity, susceptibility to pests and diseases and an overall decrease of the food quality. However, in Malta and French and Italian case studies, there are also more optimistic visions. In these cases, participants reckon adaptation and innovation are possible to deal with ongoing and future challenges.

Table 2 – Summary of future as foreseen by the stakeholders if nothing changes in the current pathways of development

Foreseen Future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Increased pressure over natural resources	Overexploitation of groundwater resources Exhaustion of soils Massive pollution of soil and groundwater	Pressure on water resource for agriculture Soil erosion (with yield decrease impact)		land degradation due to poor soil management	Growth of irrigated area and higher pressure over water resources	Worse conditions of soil and less useful land because of the extractive practices (gravel)	Water resources shortage and degradation of water quality from overexploitation and marine intrusion Soil degradation Desertification
Loss of traditional systems	Obstruction of the traditional oasis ecosystem				Degradation of <i>montado</i> , disappearance of almond and carob trees Replacement for irrigated cultures		
Market orientated agriculture		Increase of international competition on food product					Monopolization of markets by big enterprises Market and selling prices instability

Foreseen Future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Intensification		Development and concentration of large size and intensive farming systems – Development of off-ground farming				Reinforcement of intensive and industrial production	
Homogenization		Less farming system diversity - Homogenization of agricultural territory Landscapes banalization and artificialization	American model - more mechanization and simplification, less quality for more quantity				
Land abandonment, depopulation, and degradation of farmer's livelihoods		Farmers decrease (decrease in number of farms and they get more mechanized)	more mechanization, less persons employed Trend of modernization and growth of single farms, closure of smaller farms	Less farmers willing to cultivate because of low profitability of agricultural sector	Continuous depopulation of rural areas		Increase of production costs of due to the price and need for inputs and labour Low profit and income for farmers
Loss of ecosystem services		Biodiversity erosion with sanitary pressures for farming systems and loss of ecosystem services Decrease in nutritional value	Decrease in nutritional value				Higher susceptibility to pests and diseases

Foreseen Future	El Oued & El Grouss	Comtat Venaissin	Pisa Plain	Malta	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Cienpozuelos	Houaria Plain
Urbanization		Stronger demographic and urban pressure on the territory		More land used for construction and less for agriculture production		Increased anthropogenic pressure – more houses within the territory	
Adaptation/ Innovation		Changes in quality-label requirements specifications More controlled systems – Physical protection for productions Development of agro-ecological farming systems		Changes in agriculture will continue according to innovation in the field.			Agri-tourism / shift to organic farming.
Diversification			Diversification on farm system and farm level				
Strengthen of local chains			Due to necessary change: creation of quality niche product and local food chains with processing				

3 Possible actions

During the territory game, the territorial actors were asked to think about necessary actions to achieve or prevent important issues affecting the territory. Involved stakeholders in the case studies of Malta and Algeria were not directly asked to reflect on executable actions, thus are not included in this section. Yet, in Malta, tourism was seen as mean or an incentive to maintain typicality, as *“Tourists do not only want international food chains (e.g. McDonalds), they also want Maltese products.”*

Many of the actions, especially relating to locally adapted management relate directly to national or European schemes. Often participants thought that these national, or transnational policies were unsuitable to the characteristics of the case study, fomenting practices of systems unsuitable for the characteristics of the territory. Norms on public procurement were also found restrictive and hindering the local chains, considering that the French, Italian and Portuguese case studies found important supplying public canteens with local production to strengthen the local market. However, investment in the commercialization and transformation sectors should also include bottom-up approaches, with the organization of farmer in cooperatives and associations. Thus, pathways for a desirable future are dependent both on actions done by local actors, and others at different levels of policymaking. Suggested actions are organized according to the desired future that they relate to in table 3.

In short, to increase resilience in the territory, the territorial actors suggest:

- Creating incentives to fixate people, by improving living conditions in the rural areas and easiness of access to land for new entrants, and farmers with no tenure.
- Protect agricultural land from urbanization with territorial planning.
- Create or improve extension services to better inform and serve farmers, so that these can prefer “good practices”. Simultaneously ensure that schemes and funds in place do not favour ill-adapted or unsustainable practices over good practices.
- Foment cooperation amongst farmers so they can organize and better commercialize their products.
- Strengthen the local market by investing in transformation, storage, and organized commercialization. This ought to be accompanied by an easiness of placing products in the local market, easing procurement impositions, and sensibilization of consumers towards local products.

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Table 3 – Actions suggested by participants as possible to enact today in order to achieve their desired future for the case study

Desired future	Comtat Venaissin	Pisa Plain	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Diversification of land systems	Encourage breeder settlement Re-introduction of breeding	Training of farmers (for multifunctionality)			
Protection of natural resources		Continue the integrated Park management	Regeneration and increase of the soil productivity. Training of the local farmers and decision-makers.		Subsidies and incentives for less water consuming crops and reinforce the drip irrigation systems; Reuse treated wastewater Control the use of pesticides and encourage organic farming; Creation of industrial areas and control of these areas (rejection, etc.)
Preservation of land systems	Create green belts around towns; Organize traditional and/or agricultural knowledge transmission by ancients; Preserve wetlands and create a wetland observatory with farmers	Stop urbanization/ establish protected agricultural areas around the city; Create interstitial areas - Better separation between urban and rural areas/ urban space close to agriculture.	Protection and improvement of extensive systems; Overlay of between “forest” and “agricultural” measures	Recover the horticultural tradition via training farmers	Control expansion of urban areas; Strengthen farmland protection laws; Clarify forest the legal status of the forest
Investment in the transformation /commercialization sector		Creation of sales points for local products/aggregation of the offer/ coordination with supermarkets		Influence public purchase and the strengthening of the quality brand.	Development of direct marketing channels Strengthen fridges Organization of markets
Strengthening of local food chains	Develop local food supply for collective catering Tax non-local food (importations) Territorial Food Project Cooperation, coordination, and organization between farmers	Financial support or de-taxation for short supply chains, financing of vegetable crops; Connection with school canteens; Networks of non-farming actors like tourist guides and education services with other territories	Creation of a platform of commercialization of the products from the territory; Facilitation of the placement of local products in the local market; Increase awareness of buyers for local consumption	Environmental awareness program around consumption	governance arrangements enabling the ability of small farmers and small food businesses to invest in the transformation and commercialization of products

Desired future	Comtat Venaissin	Pisa Plain	Serpa, Mértola & Alcoutim	San Martín de la Vega, Titulcia & Ciempozuelos	Haouaria Plain
Revitalize rural areas			Increase of the incentives to attract people to the territory		Investment in tourism – infrastructure and support eco-tourism projects
Local adapted management	Implement Natural Regional Park Charter	Zonation by productive vocation of the area Re-organization of the production system/act on the seasonality/optimization of production Financial support for farmers that manage the (fragile) territory	Change support schemes and values so that it does not favour unsuitable practices in the territory	Make participatory diagnosis with producers and consumers; Create a program trainer of trainers in ecological agriculture (without agro toxics); Formative itinerary for farmers and formation of Govern Councils of cooperatives. To improve business knowledge	Use of renewable energy -Strengthening wind park Crop rotation, Reduce cultivated area, Produce according to market needs, Provide seeds, Improve water productivity Protection and control of the River
Coordinate actors		Re-definition and clarification of competence, coordination between the territorial actors; Social projects with citizens and farmers for the risk management, peri-urban gardening	Strengthen network of actors; Create platform of common interest; Creation of lobby group to represent the interest of the territory near decision-makers	Recover agrarian extension; Promotion of associationism: creation of only one agricultural cooperative that encompasses all producers of the territory, regardless the crop.	Extension services to ensure better water governance
Adaptation/ Innovation				Modernize /innovate / renovate infrastructures. It is very important to change the irrigation system because is highly inefficient.	
Market orientated agriculture					Strengthening the role of institutions to dissolve monopolies; Control marketing channels (sales prices of inputs and agricultural products, suppliers)

4 Summary

Table 4 - Summary table of D4.3

case study	Task	Participation	Actions	Desirable future
Pisa (I)	T4.1	<p>9 stakeholders environmental consultant 2 farmer's unions representation key informers representative of farmers' cooperative transformation representatives research team</p>		<p>Diversification on farm system and farm level, local food chains, aggregation of production, territorial production, transformation locally, niche products; the successful local agricultural production for the city, less soil speculation</p>
	T4.2	<p>4 territory games 22 actors including Researchers Students institutional actors Farmer's union farmers GDO</p>	<p>Territorial planning that considers urban expansion and protects agricultural areas. Better support and funding of farmers and incentives for rural areas</p>	<p>Diversification of production and of management strategies Investment in tourism Increase production Strengthening of local food systems Sustainable practices and preservation of traditional land systems</p>
Malta (M)	T4.1	<p>Educational institutions Technical/agricultural experts NGOs Farmers</p>		<p>Fostering of tourism Consolidation of area dedicated only to farming Increased cooperation/organization between farms Sustainable farming</p>
France (F)	T4.1	<p>Diversity of territorial actors with a majority of agricultural advisors (extensive services)</p>	<p>develop research for biological crop protection</p>	<p>A territory with more organic production A territory with less wine production and more diversified systems more cultivated species</p>

case study	Task	Participation	Actions	Desirable future
France (F)	T4.2	territory actors with a majority of associative sector representatives lack of local authorities representants	Diversified farming systems by introducing breeding and developing agroforestry Territorial Food Project. Development of local food processing plant on the study area. Develop short-channel and local food supply Introduce a tax on non-local food. Farmer's coordination, creation of collective farmer organization. Protect agricultural land and prevent urban sprawl.	Diversification in agricultural production (both diversification in farming systems and in an agricultural production area) - A territory with polyculture and breeding. A territory with more agroecological farming systems Reinvigorate agriculture and rural areas Preservation of agriculture in the area Relocate food system: territory with more local consumption of food and with food processing facilities
Spain (s)	T4.1	Farmers, local government, technicians, researchers, union of farmers, private foundation	Foment cooperation between farmers – revive cooperatives	Recovery of traditional vegetable cultivation Overcoming individualism - more cooperation amongst farmers More professional farmers Support from public policies - canteens, public procurement
	T4.2	farmers Technicians Association of farmers - union and water management bodies Social movements	Improve extension services and access to training and information by farmers Cooperative of farmers Promote new local markets Improve infrastructures, modernization Diversification	Recover of traditional cultivation Better organization of producers Feeding Madrid and local villages Multifunctional farming Public procurement
Algeria (A)	T4.1	Producers Farmers' associations Diverse administrative structures Department of agriculture Unites of processing and exportation	Accompaniment of farmers Awareness of youth towards agriculture better management of natural resources Diversification of the financial support New arrangements of the agrarian sector for the simplification of cooperation amongst farmers	Rural development - better roads. Electrifications (etc). Empowerment of farmers Development schemes to promote exportation of products. Sustainable agriculture and protection of natural resources
Portugal (P)	T4.1	Local and reginal administration, local and reginal associations	design suitable policies increase water availability	preservation of traditional systems more people Valorization of ecosystem services

case study	Task	Participation	Actions	Desirable future
Portugal (P)	T4.2	Local and regional administration, local and regional associations	<p>Increase cooperation amongst associations and other acting institutions.</p> <p>Strengthen local market - easiness of access to local market and of local public procurement.</p> <p>Lobbying for flexibility and better adaptation of public policies and funds to the territory</p>	<p>Diversification of farm systems.</p> <p>Stronger local food systems - processing facilities</p> <p>Agro-ecological farming</p> <p>More coordination amongst farmers</p> <p>Valorization of products and associated services</p> <p>Preservation and improvement of traditional systems</p> <p>Better use and management of local resources within the particularities of the territory</p>
Tunisia (T)	T4.1	farmers, regional and local administration NGOs		<p>organic farming</p> <p>More arboriculture</p> <p>Multifunctional systems associated with livestock</p>
	T4.2	farmers, regional and local administration NGOs	<p>Define and enforce limits to groundwater use.</p> <p>Implement water efficient using techniques.</p> <p>Treat wastewater</p> <p>Reforce the role of institutions. Create Markets.</p> <p>Improve touristic infrastructures and incentivise ecotourism.</p> <p>Clarify forest legal statues and enforce law</p>	<p>Improve water quality and management</p> <p>Break commercialization monopolies</p> <p>Growth of ecotourism</p> <p>Preservation of forest</p>

5 Synthesis of WP4

Here we thought to understand how each study case related, or not, the described main drivers of change and found potentialities and threats to the development of the territory to the predicted and desired future, and if the agreed actions are in concordance with these. Although generally there is a good correspondence between main drivers and predicted future, and the desired future and actions, there are also some oddities. A synthesis of these can be found in table 5.

It is interesting to note that all case studies found technology an important driver of change, yet only in the case of Malta was it made explicit the potential of innovation to help the territory. In Malta and the French case studies, innovation and adaptation was a mentioned as a desired future, but only the Spanish case study presented an action related to adaptation and innovation. Despite the link here made between technology and innovation, it is worth mentioning that innovation is not only through technology. The introduction of new cultures or new commercialization strategies are also a form of innovation, yet we opted to group these issues in the topics they directly relate, as diversification and commercialization respectively in these cases.

Public policies are a predominant topic across all stages of discussion. In the Italian, Maltese and Portuguese case studies they were perceived as both a threat and a potentiality, as European funds dedicated to agriculture offer possibilities for new cultures, techniques or just to safeguard production costs. Yet, if poorly adapted to the conditions of the territory can have hampering results to both production and environmental strain. As so, the need for locally adapted management, including flexibility in national and/or European measures was deemed as a necessary action by all case studies.

Also, market and commercialization are common topics. Market is perceived as a potentiality, as pressure for a more local chain might push the system towards that direction, yet the weight of globalization can have the contrary effect. In the Portuguese and Spanish case studies, market pressure is recognized as a potentiality and a threat, yet not implicit in the main drivers of change. Out of the 5 case studies that find market pressure as a driver of change, only the French and Tunisian case studies predict a direct effect on agriculture, and only the Tunisian offers actions to deal with the market issue. Other case studies, more concerned with strengthening local chains, proposed actions on creating and diversifying local markets. This action was also linked with the need to ease public procurement to feed canteens and investment in transformation facilities.

The work of public pressure, namely towards a more diversified and local systems, was identified in the French and Portuguese case studies. Interestingly, it emerges as a potentiality, not in these, but in the Spanish, Maltese and Italian case studies. In this last one, also the contrary is seen as possible, that there is not enough demand to sustain such production systems. It is also in Pisa that in the future it is predicted a necessity in reinforcing local systems. Actions towards the education of consumers were suggested by all case studies, focused in strengthening the local chains.

Although only in the Iberian case studies tradition was perceived as potentiality, in all case studies it was found land systems that were worth preserving. In the cases where urban pressure is higher, it is needed to take action preventing further conversion of agricultural lands. In the Italian, Portuguese and Spanish case studies there is an explicit will to preserve and revitalize traditional land systems, but only in the last two concrete actions were presented.

Table 4 - Highlights of WP4 findings per case study. Including: main **drivers of change** identified by the stakeholders leading towards both desired and undesired paths, **potentialities and threats** found to the development of the territory, **predicted future** if no action is taken, **desired future** and possible **actions** to meet such future.

		EOEG (Algeria)	CV (France)	PP (Italy)	Malta	SMA (Portugal)	SMVTC (Spain)	HP (Tunisia)
Drivers of change	Technology	x	x	x	x	x	x	x
	Public policies	x	x	x	x	x	x	x
	Market pressure	x	x	x	x			x
	Public Pressure		x			x		
	Urbanization		x		x		x	
	Production Costs			x		x	x	x
	Increasing demography				x			
	Abandonment			x				
Potentialities (P) & Threats (T)	Commercialization and transformation		x	x				
	Governance			P & T	P & T	P & T		T
	Tradition				T	P	P	T
	Specialization	P & T				P & T		T
	Diversification			P	P & T			
	Quality	P	P	P			P	
	Consumption preferences			P & T	P		P	
	Market		P & T	P & T	T	P & T	P	T
	Ecosystem services/ Environmental concerns	T	P	P	T	P & T	T	T
	Innovation				P			
Predicted Future	Territorial planning		T	P & T		P & T		
	Increased pressure over natural resources	x	x		x	x	x	x
	Loss of traditional systems	x				x		
	Market orientated agriculture		x					x
	Intensification		x			x		
	Homogenization		x	x				
	Land abandonment, depopulation, and degradation of farmer's livelihoods		x	x	x	x		x
	Loss of ecosystem services		x	x				x
	Urbanization		x		x		x	
	Adaptation/ Innovation		x		x			
	Diversification			x				
Strengthen of local chains			x					
Desired future	Diversification of land systems		x	x		x	X	
	Protection of natural resources	x			x	x	x	X
	Preservation of land systems		x	x	x	x	x	x
	Investment in the transformation /commercialization sector	x	x	x	x	x	x	X
	Strengthening of local food chains		x	x	x	x	x	
	Revitalize rural areas		x	x	x	x		
	Local adapted management			x	x	x	x	
Coordinate actors	x		x	x	x	x	x	

Actions	Diversification of land systems		x	X			
	Protection of natural resources			x		x	x
	Preservation of land systems		x	x		x	x
	Investment in the transformation /commercialization sector			x		x	x
	Strengthening of local food chains		x	x		x	
	Revitalize rural areas					x	x
	Local adapted management		x	x		x	x
	Coordinate actors			x		x	
	Adaptation/ Innovation					x	
	Market orientated agriculture						x