WORKSHOP
for the SOCIAL TRANSFORMATION

UGPM
ACTIONS LOCALES

AGRO-ECOLOGY ANIMATION GUIDE

PRIL 2020

This facilitation guide is not a capitalization document. It has been designed to be used by facilitators involved in agro-ecology extension.

This village animation is very important. Therefore, the facilitator should not improvise the meeting. It should be well organized and have a special character for the participants.

AGRO-ECOLOGY ANIMATION GUIDE

I **Introduction... ..... 1**
1. Context and justification... 1
2. Identified problems 2

II. **Alternatives... ..... 3**
1. Agroecology as an alternative of production... 3
2. What is agroecology ?. 3
   a. Agroecologicals practices... 4
   b. Principles... 5
   c. Advantages of agroecology... 6

I. INTRODUCTION

1. Context and justification

UGPM is firmly committed in supporting the controlled transformation of family farms. This challenge requires taking into account the peasant identity by rehabilitating basic values. These include the relationship between man and nature, the peasant and natural resources.

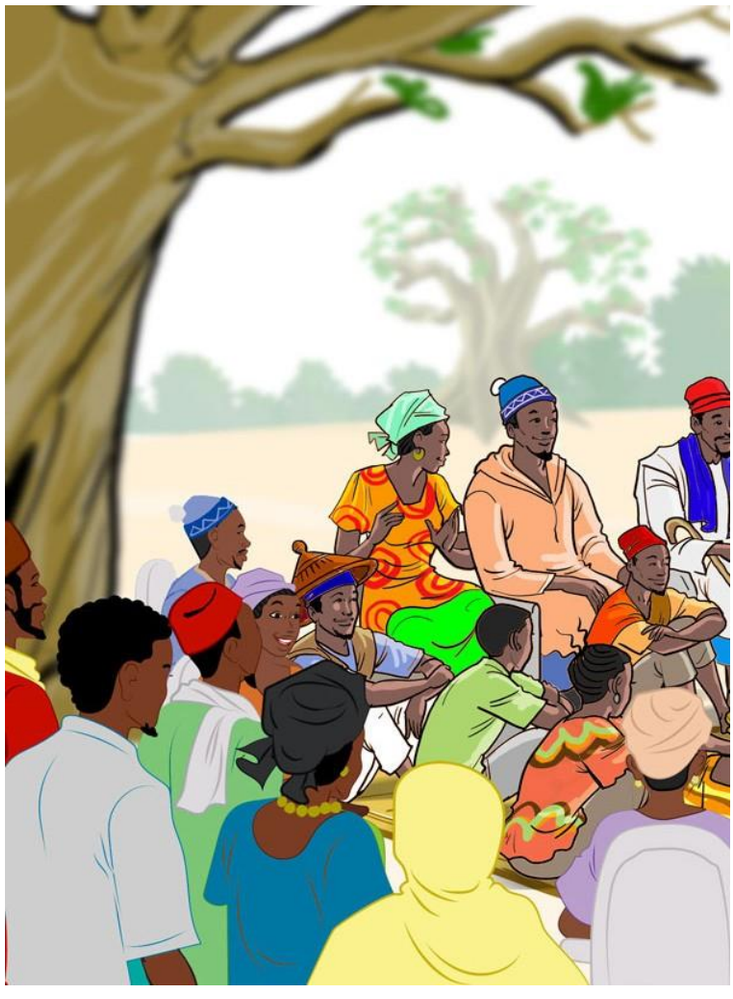
The UGPM particularly aims to rehabilitate the environmental peasant culture and to equip its producer members with the knowledge and skills needed to carry out ecologically viable agro-silvo-pastoral activities.

Since its creation, the UGPM peasant's organization is involved in a process of natural resource management. It has then initiated various actions in order to restore the ecosystem.

UGPM's initiatives in this area are numerous: reforestation, natural shoots restoration, training in agroforestry, soil regeneration, etc. are successful examples that are often cited as references within the Senegalese peasant movement.

The UGPM is also committed in expanding agro-ecology on a large scale in its area.

This is why a large part of its extensive program to revitalize the groups is devoted to agro-ecology, which is now an alternative to climate change.



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The groundnut basin was once the most important agricultural region in Senegal. The land was generous and agro-pastoral production was sufficient. The population lived from agricultural activities and there was a good social cohesion within families and local communities. Unfortunately, this prosperous situation gradually deteriorated, especially from the 1970s onwards, marked in particular by the climate aridification process. The ecological, economic and social impacts of this situation have strongly affected the population food security and the functioning of local societies.

1. Identified issues

The current situation is notably characterized by:

Severe degradation of natural resources
The area's forest resources have been severely depleted (loss of biodiversity). The groundnuts and cereals monoculture practice and the abusive use of chemicals have depleted the soil.

Strong pressure on soil
With a rapid urbanization, agricultural land that is already poor in terms of organic matter is increasingly shrinking. In addition the effects of climate change do not favor the productivity of agricultural activities.

A competition on the land
The space of some rural communities is subject to strong competition with the mining development.

A decrease in rainfall
Rainfall hardly exceeds 300 to 400 mm/year and the sandy soils, originally poor in organic matter, are subject to various erosive processes (wind, water, etc.).

Production systems simplification and decline in agricultural performance
The once diversified agricultural activities progressively shrank. Livestock farming is declining. The natural resource degradation has led to a simplification and artificial environment for ecosystems and there is a lack of local initiatives to regenerate natural resources and adapt to the climate change phenomenon.

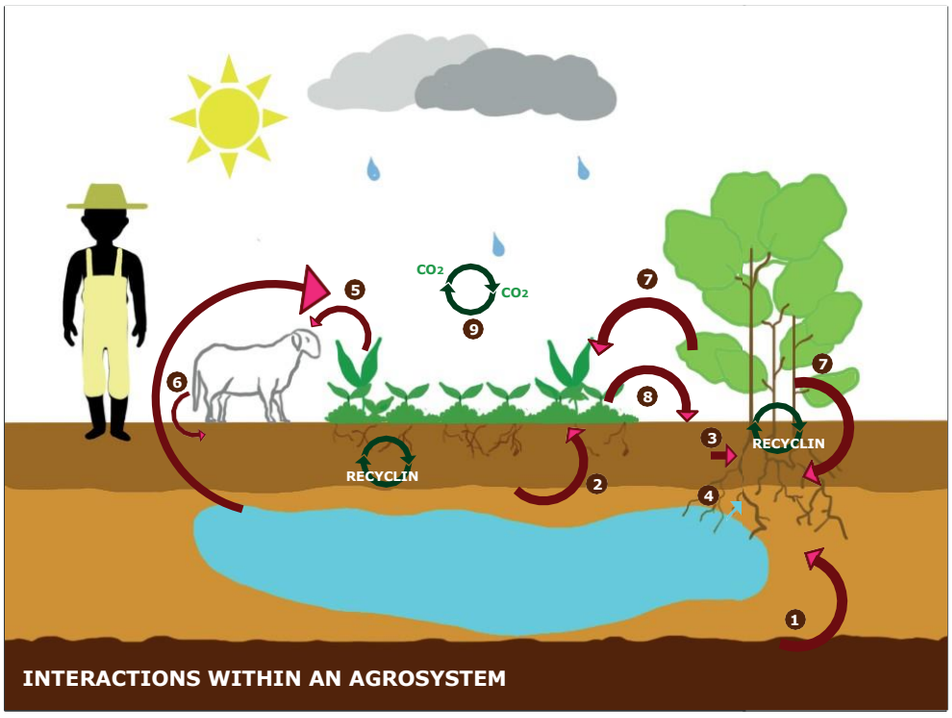
I. Alternatives

1. Agro-ecology as a production alternative

Agro-ecology is a way of designing production systems that rely on the functionalities offered by ecosystems. It is about maximizing the use of nature as a partner and production factor by maintaining its renewal capacity.

We discover how agro-ecology emerged in response to three major challenges facing conventional agriculture today:

- Feeding an ever-growing population
- Preserving the environment
- Facing uncertainties (depletion of certain resources, climate change, disappearance of certain plant and animal species, etc.).



① The soil is derived from the weathering of the parent rock

② The soil contains nutrients needed for the plant development and assimilated thanks to the water

③ Plants of the legume family fix nitrogen in the soil

④ The water in the subsoil is used for watering crops and the supply of deep-rooted plants

⑤ The plant feeds the

⑥ Animals provide organic matter and feed the soil which feeds the plant

⑦ The landscape protects the plant (windbreak) and feeds the soil (biomass supply) which feeds the plants

⑧ The plant protects the soil from the effects of solar radiation, wind and heavy rain

⑨ Plants, through photosynthesis, absorb carbon gas and release oxygen into the atmosphere.

2. What is it?

The peasant agriculture logic is the foundation of agro-ecology

Originally, peasant agriculture aimed at the long-term balance of the whole system. It was a multistage agriculture in which there was a strong synergy between plant and animal livestock. The cropping system was associative, using a diversity of species with different characteristics, which could provide the farmer with a variety of products throughout the year without exhausting the soil or destroying the forest resources.

Agroecology is the integrated use of natural resources and mechanisms for better production.

It combines ecological, economic and social dimensions and aims to make better use of the interactions between plants, animals, humans and the environment.

Agro-ecology presents a specific articulation between human beings and natural resources: water, land, landscape. This production method aims to optimize the production while maintaining the balance of the farm with its natural, economic and social environment. In articulating these ecosystems to produce food, man respects the natural mechanisms that allow them to renew themselves.

a. The agro-ecological practices

1. Reduce splash, wind erosion

- Plant cover
- Fixed landscape maintenance (RNA)
- Tree planting (multi-species)
- Simplified cultivation techniques
- Avoiding burns (bush fires and land clearing)
- Establishment of a protective hedge

2. Increasing soil fertility

- Plant cover, green manure
- Rotation without chemical fertilizer
- Rotational grazing
- Associated crops
- Composting
- Phosphating of natural bottoms

3. Increasing biodiversity

- Sexual confusion (insect pollinators)
- Combination of weed control strategies
- Natural pest control (integrated pest management)
- Agroforestry

4. Preserving water resources

- Mulching
- Plant cover

5. Promoting genetic diversity

- Rotation extension and crop rotation diversification
- Rotation without chemical fertilizer
- Seed sorting
- Hardy breed
- Varietal diversity
- Farmers' seed
- Associated crops

6. Increasing the herd autonomy

- Rotational grazing
- Hardy breed
- Animal health
- Improvement of the ration nutritional quality
- Grazing in orchards

7. Promoting co-productions

- Enhancing the value of production
- Transforming productions
- Consumption of field products
- Trade in products

a. The principles

Agro-ecology is based on four elements:

1. **Collective intelligence** Agro-ecology relies on the emergence of collective initiatives, human interaction, experience sharing and collective projects are crucial for change. The actor's training makes it possible to implement innovative practices and to mobilize new fields of knowledge. Therefore, people practicing agro-ecology are encouraged to pass on their experience and to share it with others.

2. **Plant cover and rotation**
The cover protects the soil and thus reduces the degradation risk. In addition, covering with living or dead matter improves the soil structure by adding organic matter and developing biological activity in the soil. The rotation- The crop cultivation favor the rest and renewal of the soil, prevent from erosion and remove weeds.

3. **Adaptation to climate change**
Agro-ecology responds to the challenge of the century, which is climate change. Climate change is partly due to greenhouse gases of which poor agricultural practices are responsible for 30% of emissions. This results in irregular seasons, poorly distributed rainfall in time and space, temperature variations, etc.

4. **Biodiversity**
Living organisms in the soil and plants have a positive impact on the structure that promotes rooting, water retention and limit erosion. They can protect crops from pests and diseases. They have a central role in decomposition and nutrient cycling. They provide economic and social services (traditional medicine, recreation etc.).

b. Agro-ecology benefits

Agro-ecology as the science of natural resource management:

- It promotes the resilience of the system (diversification, autonomy and resistance to climatic hazards);
- Minimize the use of sensitive resources (fertilizers, plant protection products, irrigation fuel);
- Preserves natural resources (water, soil, air and biodiversity);
- Promotes-specific and genetic diversity in space and time (varieties, populations, breeds);
- Promotes ecological services (pollination, biological control, carbon storage, climate regulation);
- It is also a response to social exclusion (with few means, the small producer wins with agro-ecology);
- It is a response to the socio-economic impacts of agricultural modernization by organizing the market differently. Agro-ecology makes it possible to build systems that are independent from agri-supply and to transform the logic of public policies, thus reinventing the farmer's profession.

The UNION des Groupements Paysans de Meckhé (UGPM) was created in 1985 in response to the changing context that made life in rural areas increasingly difficult.

UGPM's vision is a "social development" in which the economic dimension is not an end in itself, but a means among others to contribute to the development of families and local societies.

Four objectives characterize the UGPM's territorial project:

- Environmental management and restoration
- Developing income-generating activities
- Fighting the rural exodus
- Valuing the peasant identity and strengthening solidarity and mutual aid

It has more than 4500 male and female members in the communes of Koul, Meouane, Merina Dakhar, Meckhé and Ndande

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