

How to fight in a sustainable way against adverse effects of climate change in West Africa: the case of local knowledge practices

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Problem/Opportunities

In West Africa, production systems are vulnerable and are subject to regular negative effects of natural degradation processes. These systems are particularly vulnerable to climate variability and climate change, whose consequences are among others (i) the decrease in water availability, (ii) the regression of production potential, (iii) the installation of the increasing vulnerability of households.

Practices and mitigation measures are undertaken and implemented in West Africa countries by communities through mechanisms and endogenous adaptation strategies; the objective is, failing to prevent certain phenomena, to limit their negative effects on populations. Very often these local initiatives of good practices are supported by state agencies and NGOs/Associations.

This article aims to contribute to identifying, capitalizing and disseminating the best local knowledge to adapt to climate variability and climate change. It deals with all the important agrosylvopasture sectors that were identified: Agriculture, Water, Livestock breeding, Forestry, etc.

The article focuses on the results of investigation carried out by ENDA Energy, Environment and Development in these areas under "Capacity Development for Adaptation to Climate change and GHG Mitigation" C3D+¹. The objective of the association is to present a capitalization of experiences, successes of endogenous mitigation of climate change by rural communities. These results should be used to guide and improve rural development policies and climate change adaptation in developing countries based on replication capabilities of the described practices.

Initiation - Solutions - Lessons of experience

The initiative to capitalize the best knowledge for mitigating the adverse effects of climate change is subject to much attention nowadays from the State and the technical and financial partners.) In its synthesis² report, the Intergovernmental Panel on Climate Change (IPCC) shows that in Africa by 2020, 75 to 250 million people will suffer from water stress

exacerbated by climate change. The yield of rainfed agriculture could decrease by 50% by 2020 in some countries. The surface area of arid and semi-arid lands could increase by 5 to 8% by 2080 according to several scenarios. This initiative is relevant to the extent that more innovative and effective practices for adaptation exist but are sometimes overlooked by key stakeholders; this is the reason why their development and diffusion is poor.

This article explores the different practices in relation to their performance, social acceptance and adaptation to local and environmental context that can be considered as good practice. The task consisted in making an inventory in several countries of the best knowledge that directly contribute to the mitigation of climate change.

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²IPCC (2007): Climate Change 2007, Synthesis Report. IPCC, Geneva, Switzerland, 103 pages



Fig 1. Fish hole in Benin



Fig 2. Half-moon in Burkina Faso



Fig.3 Mangrove rehabilitation in the Gambia



Fig.4. Dike for water retention in Mali

The work is done in two stages: (i) the collection of secondary data, (ii) direct investigations with rural stakeholders. Investigators worked on the most relevant experiences in each country that include endogenous practices easily replicable. In practical terms, the investigation phase was conducted in parallel with ongoing consultation with stakeholders throughout the investigations. For each practice the information sought is intended to inform on the best technology performance on 12 points: (i) the name of the practice, (ii) the geographical area, (iii) the information on the practice (iv) illustrations, and (v) the relationship of the practice with climate change, (vi) a description of the practice, (vii) the sustainability, (viii) the advantages and performance, (ix) the constraints (x) the important advices for implementing each practice, (xi) the possibilities for replicating technologies and (xii) the estimates of the practice costs.

Results

The results of investigations have allowed identifying many local practices of which 31 are described as relevant practices to adapt to climate change. The general consensus is that they involve a variety of areas. But it appears that many actions are undertaken by the population in the fields of agriculture (52%), environment (23%), water management (19%), and livestock (6%). The assessment shows that in the field of planning and land management; at least 12 out of 31 technologies are widely used by farmers to improve their yields. These practices are increasingly integrated into agricultural routes because of the aggravation of the process of desertification and climate change. Practices are used either alone or in combination with each other or with others.

Management of the environment is significantly taken into account in the fight against the phenomenon of land degradation and climate change. Populations seem to appropriate most of them and it appears that their jobs are more systematically exercised in production activities.

The third area is water management. The issue of water management is important because it is cross-cutting to agricultural and pastoral production. Practices relating to water management are growing. Besides to this, there is the increasing popularity of dikelets and various types of impoundments with regard to which populations are generally highly motivated. Many other practices are developing to increase the adaptability of the population to water resources. It involves other systems of irrigation, impluviums, pumps, wells and boreholes, etc.

The lessons learned show that these practices, although they are endogenous, require an investment. These endogenous experiences contribute effectively to cope with variability and climate change and the development of areas where they are implemented. They thus constitute an effective way to fight against the rural exodus. The involvement of researchers, technical officers of the State and those of other development partners in the promotion of local initiatives of best practices is an asset for improving technical performance of the practice. Thus, it is a source of motivation and confidence for grassroots communities to meet the challenges of climate variability. Even though the issue of intellectual property does not appear to be a concern for local populations, it deserves to be analyzed in the context of globalization.

Conclusion and perspectives

Investigations on local practices to adapt to climate change have allowed realizing the variety of available techniques in almost all areas. Agriculture, water management and environment are clearly ahead of the others. But the general consensus is that the identified practices are immediate responses to difficulties that people are coping with. There is not yet in our opinion a strategy developed to adapt to climate change. Populations should therefore work essentially towards developing real strategies to anticipate what will happen in few years and what kind of adaptation actions should be implemented now. This will allow to not resorting to selective measures to address problems and to know what types of crops are adapted to the new conditions: what kind of animals should we breed, what kind of species and cropping systems, or what production management and strategy, etc. should be promoted. The integration of indigenous knowledge in development plans and strategies for adaptation to climate change remains a challenge in most West Africa countries. Similarly, holders of local practices have many difficulties to stand out in front of modern techniques of adaptation put forward by policy makers despite the advantage of local knowledge in terms of appropriation, investment and the possibility of replication. This is why it is important to establish a platform for exchange between carriers endogenous practices, policy makers, researchers and development actors to better take into account local knowledge in planning and adaptation strategies for a sustainable development of communities.

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