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News from Drynet

A global initiative giving future to drylands

Drynet is a project of 14 organisations from all over the world. They work together to combat land degradation

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Drynet II : Promoting resilience in drylands

The second phase of the Drynet programme was launched in Santa Cruz, Bolivia from 18 to 21 January 2011. The meeting was attended by more than a dozen members of Drynet representing Africa, Latin America, Asia and Europe. It was followed by a training session on intercultural communication.

Drynet II 'A springboard for the promotion of resilience in drylands' has officially started its second phase on January 1, 2011 with funding from the Swiss Agency for Development and Cooperation, Switzerland. With this second phase, Drynet will continue to provide a unique opportunity to 14 civil society organizations around the world to work together to promote the interests of dryland communities and also their ecosystems.

In addition to giving the opportunity to members to strengthen their collaboration, the launch of Drynet II helped the sharing of experiences, especially PROBIOMA research on land reclamation through bioreme-

diation and on bio-pesticides. It also allowed capacity building on intercultural communication. Working in an international network, the distance related to time, geography and culture creates a number of challenges that need to be addressed. The training session on "Cultural Dynamics" has addressed these challenges by drawing on practical examples and opening a discussion on how to improve our collaboration in an intercultural setting. This framework is based on the recognition of differences and emotions and the reformulation of negative judgments and feelings in a more neutral and positive attitude. It is also based on exploration, which requires a curious and open mind for easy interaction. The third pillar is the creation of solutions with a view to finding answers to questions such as "how a team / network can cooperate, how to manage differences, how to keep the inspiration and the dynamics of the network?"

The training on "Cultural Dynamics" revealed both the latent and clear potential of the network. At the same time it helped understand that the diversity of the network was in fact its strength. It provided us with a tool



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for group or network management drawing on the capacity of its members to define a common framework for expression, communication and creativity and to create a commitment.

The inception meeting and training of Santa Cruz was a dynamic vector that helped mobilize more Drynet network members around the improvement of the living conditions of dryland communities through capacity building, knowledge sharing and advocacy.

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Review of the Implementation of the United Nations Convention to Combat Desertification

Synthesis of the ninth session - CRIC9

The second special session of the Committee on Science and Technology (CST S-2) and the ninth session of the Committee for the Review of the implementation of the United Nations Convention (CRIC 9) to Combat Desertification (UNCCD) met in Bonn, Germany from 16 to 25 February 2011.

The key themes on the agenda of

the two committees focused on the review of inter-sessional work in the follow-up of the decisions taken at the ninth session of the Conference of the Parties (COP 9) in October 2009 and relating to the impact and performance indicators. The session of the CST-S2, which was held from February 16 to 18, examined the progress achieved on methodologies and baselines for the effective use of the subset of impact indicators on strategic objectives 1, 2 and 3 (to improve the living conditions of affected populations, to improve the condition of affected ecosystems, to generate global benefits through effective implementation of the Convention) of the strategic framework-plan to strengthen the implementation of the Convention (the strategy), as well as: the organization of the first scientific conference, preparation of the second scientific conference, the correspondents for Science and Technology (CST); and the progress achieved in the implementation of the knowledge management system. CRIC 9 which was held from February 21 to 25, examined the following issues: preliminary analysis of the information contained in the reports by Parties, UN agencies and intergovernmental organizations and civil society organizations (CSOs), on the implementation of the Convention, in relation to performance indicators; best practices in the implementation of the Convention and the improvement for procedures for communication of information, and the quality and format of the reports to be submitted to the COP.

Delegates also had an interactive thematic discussion on the outcome of the process of preparing the report and an open dialogue with representatives of CSOs. The theme of this dialogue was "the technologies of sustainable land management, including adaptation and resilience." Open dialogue sessions have provided a mechanism to integrate the participation of CSOs and their contribution in introducing reflection, and it must be added that this session is the first CSO dialogue held during the meeting of a subsidiary body of the Convention to Combat Desertification.

Presentations were given on "Knowledge Sharing in sustainable land management in Moldova", "sustainable management of land for food security, the fight against poverty and ecosystem development in India" and "reducing poverty and land degradation through agroforestry and integrated ecotourism in the Caribbean". In addition to these presentations that have attracted the support of the Parties to the CSOs involved in the fight against desertification in the areas of agriculture, forestry and livestock, other presentations were made to strengthen the contribution of these actors from the private sector to the reports on progress in the implementation of the "Desertification Convention".

This requires, a priori, an improvement of the PRAIS portal, the conduct of a capacity building needs assessment for CSOs, an adaptation



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of the reporting format for CSOs, the facilitation of the communication and cooperation between CSOs and their national focal points and the procurement of documentation at the appropriate time to allow the preparation of reports. In addition there is a need for the Convention to have quantified targets to evaluate investments and those who have already been made, to strengthen its ties with other Rio conventions, and a campaign to make civil society actors most active in the field.

Delegates were largely satisfied with this dialogue session, the evaluation as well as the progress made on indicators of impact and performance. Documents prepared by the Secretariat with the preliminary analysis of the information contained in national reports, uploaded into the Performance review and assessment of implementation system (PRAIS) portal, were well received, despite the fact that some delegates highlighted several areas for improvement of the system of reporting and dissemination of results. Participants also expressed interest in the development of the knowledge management system, the compilation of best practices identified in the reports of PRAIS, and the improvement of impact indicators, among others. As for the other items on the agenda, the CST S-2 and CRIC 9 adopted reports summarizing the ideas, suggestions and proposals of delegates, leaving the Conference of the Parties to explore the options further at its next session in October 2011.

Conclusions

Recommendations were made at this ninth session on, among other things, the use of existing scientific networks to establish an international network on drought, land degradation and desertification; the use of IPCC to serve the UNCCD; the use of biophysical data; the adoption of an "Option of the Kyoto Protocol II" that would focus on the integration of land issues in the negotiations on climate change and the development and implementation impact indicators for the assessment of the strategic objectives of the Strategy for a global partnership to reverse and prevent desertification and land degradation and mitigate the effects of drought in affected areas in order to contribute in poverty reduction and the long-term due respect to the environment.

With 89 affected country Parties (a respectable 53% of the total of countries) and 12 developed countries that have submitted their reports, in addition to the reports of accredited CSOs, the Global Environment Facility (GEF) and the Global Mechanism (GM), the first reporting cycle under the PRAIS was appreciated by all of the participants in Bonn. While the difficulties with the report templates, the limited time given for submission of reports, and sub-optimal level of support received by some countries and regional centers of reference have been cited as factors limiting participation in the preparation of reports, the affected countries have largely supported the findings. In their discussions on the analysis of national reports by the Secretariat, some participants suggested that PRAIS has the potential not

only to improve the implementation of the Convention and to provide a tool for countries to base their policies on quantitative measures, but also through its web portal, to expose what the Convention do for all of its stakeholders, governments and UN agencies, scientists, the private sector and local actors.

Participants also stressed the analysis of PRAIS's data on financial flows for the implementation, which is considered as a common step towards achieving a shared understanding of the real financial situation and resources available to the Convention by all funding sources, a subject that has always opposed developing countries and developed countries.

Another factor seen as contributing to greater transparency in the implementation of the Convention was the participation of CSOs in the PRAIS, which was well received by delegates of both the affected countries and of the developed country Parties. However, the details of the involvement of CSOs in future reports are not yet resolved, and examination of issues such as the representation of accredited CSOs to the Convention, the direct submission of their reports or through national focal points, will be instrumental in determining the importance of this participation, as well as the extra dimension they can bring to all of the data of PRAIS.

For more information see:
<http://www.unccd.int/cop/cric9>
<http://www.iisd.ca/desert/cric9>

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Agenda International 2011

From 10 to 17 juin 2011 - First African week on Arid Lands, Dakar, Senegal

Making the most of the knowledge developed during three decades of struggle against desertification and implementation of sustainable land management programmes to address climate change and sustainable development: SLM in Practice. The MDG Centre for West and Central Africa, the African Forest Forum (AFF), the United Nations Food Organization (FAO), the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), the Sahara and Sahel Observatory (OSS), the World Agroforestry Centre (ICRAF), the International Research Institute for Climate and Society (IRI), the United Nations Secretariat of the United Nations Convention to Combat Desertification (UNCCD), the United Nations Convention for the Conservation of Biodiversity (UNCBD), the United Nations Framework Convention on Climate Change (UNFCCC), organize a conference in collaboration with the Senegalese government to draw the lessons of three decades of SLM and develop a common strategy for the Sahel countries as well as initiate a process of dialogue, exchange

and support for countries in the Sahara and Sahel region who wish to strengthen their capacity in SLM and at the same contribute to the implementation of the Great Green Wall program.

This first African week of Arid Lands is a contribution to the international Year of Forests (2011 - Declared by the UN) and the United Nations decade of struggle against desert and desertification.

17 juin 2011 -
World Desertification Day
"Forest sustain life in drylands"

This year is the International Year of Forests and although we know all about the temperate and tropical forests, we do not know the dryland forests that cover 18% of land in arid areas.

Forests are essential to the eradication of poverty in drylands and are also the first step toward healing the drylands. They protect against desertification and drought.

Dryland forests are also highly important sanctuaries of biodiversity and produce goods of the ecosystem such as fuel, timber, medicines and herbs. Dry forests are a protection against drought and desertification and a safety net for the poor.

In 1994, the United Nations General Assembly declared June 17th World Day of the fight against desertification and drought to raise awareness

about this problem and implement the United Nations Convention to Combat Desertification in countries affected by serious drought and / or desertification, particularly in Africa.

<http://www.un.org/fr/events/desertificationday/>

24 and 25 June 2011

Climate Investment Funds (CIF) Partnership Forum. More than 400 stakeholders from 45 countries including 15 African countries will gather in Cape Town, South Africa, on 24 and 25 June 2011 for the Climate Investment Funds (CIF) Partnership Forum, co-hosted by the African Development Bank. This important annual event, where decisions are made on the financing of pro-climate development worldwide, takes place for the first time on the African continent at a time when Africa is ready to embark on green growth.

<http://www.afdb.org/fr/news-and-events/article/fifteen-african-nations-embarking-on-climate-smart-development-to-attend-the-2011-climate-investment-fun>

10 - 21 octobre 2011

10 to 21 October 2011
COP 10 of the United Nations Convention to Combat Desertification will take place in October 2011 in Gyeongnam, Korea.
www.unccd.int/cop/cop10/menu.php

www.unccd.int/cop/cop10/menu.php

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LAND GRABBING IN SENEGAL

Agricultural land grabbing in Africa by foreign states, faced with the limited availability of land for self-sufficiency, and multinationals has been criticized during the World Social Forum held in February 2011 in Dakar, Senegal. This phenomenon has gained momentum with the emergence of food crisis in recent years. It is correlated to the climate (drought, etc.) and energy crisis. In Senegal, land grabbing has increased since 2006 with the announcement effect aroused by some state programs that are agribusiness-oriented (Return to Agriculture - REVA, Great Agricultural Offensive for Food and Abundance - GOANA, Agro-fuels). According to some civil society organizations, investors are primarily motivated by capital gains on the sale of products and foodstuffs. Companies producing biofuels have been indexed in the acquisition of large areas to grow *jatropha* in Africa.

The scale of land grabbing has led NGOs like Enda Pronat and Action Aid in Senegal, to respectively undertake the inventory of land grabbing in the country and study the link between this phenomenon and biofuels, with the aim of securing land for small producers and a better understanding of the relationship between biofuels, food security,

environment and living conditions of communities.

This issue rallied many social movements at the World Social Forum. They denounced through their final declaration published on February 10, 2011 "... the transnationals that monopolize the land and develop genetically modified seeds and food that deprive people of the right to food and destroy biodiversity" and demanded "the sovereignty of people in defining their lifestyle as well as the implementation of policies that protect local production, give dignity to farm work and maintain the traditional values of life.

" Social movements have advocated farmer agriculture which they say is a real solution to the food and climate crisis and also means access to

land for those who work on it. Thus, they call for a large mobilization to stop land grabbing and support local farmers struggles".

Synthesis by Emmanuel SECK & Fatima KABA

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Source : Report on "l'accaparement des terres au Sénégal : Etat des lieux".- Enda Pronat, nov 2010.



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SOCIAL DYNAMICS FOR SUSTAINABLE MANAGEMENT OF THE ENVIRONMENT IN JOAL-FADIOUTH

Since the early years of 2000, environmental issues have become more and more important in the town of Joal-Fadiouth, partly thanks to the instigation of state institutions such as the Ministry of Tourism, the Ministry of Environment, local authorities, the mayor of Joal-Fadiouth and environmental non-governmental organizations such as IUCN, ENDA, and WWF.

The recommendations of the World Summit on Sustainable Development in 2002, among other things, to create marine protected areas; Senegal's decision, following IUCN's World Congress on Protected Areas in Durban in 2003, to establish a marine protected area in Joal-Fadiouth in 2004 as well as sensitization campaigns by the above-mentioned NGOs and the 'wildfire spread' of the mangrove reforestation in the Saloum Delta prompted many local associations to engage in environmental conservation.

The implementation process of the Convention to combat desertification in Senegal which has contributed to the democratization of natural resource management has



Ecoguides in Joal Fadiouth mangrove swamp, Senegal

also led various NGOs to engage in the conservation of the forest, the preservation of agricultural land and water resources, the development of handicrafts and trade, agricultural development, the promotion of renewable energy, tourism development, etc. This Convention also recognizes local communities and community-based organizations as key players of the action programs to combat desertification that are to be implemented both at the national and local level. It emphasizes a participatory and iterative approach with local stakeholders.

The range of local membership organizations active in environmental and natural resource management comprises mainly organizations of youth and women volunteer and sensitive to environmental issues. Basically, these organizations aim to pool their efforts to form a block representative of a sector (tourism, fishing, crafts) and/

or to meet the economic and social interests of their members.

This is true of economic interest groups (EIG) established by women in the fisheries sector. Indeed, the importance of fishing activity implies a fish processing sector that is privileged by women who make up about 78% of the transformers. However, the very basic processing techniques used in this area cause problems of pollution and thus environmental safety. These techniques range from fermentation to drying through to smoking. Among the women's groups active in natural resource management are: the "Femmes Coquillages" EIG, the "Fata Ndébane" EIG, the "Dynamique Femme" EIG, the "Nannir" EIG, the "Nbin Rimi" community-based organization (CBO), and the "Sine Sine" association.

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Young people are active mainly in tourism with the mangroves in their most popular sites. Currently tourist guides who have gathered in an association (association of eco-guides of Joal-Fadiouth) since 2003 are active in the preservation of mangroves and are moving towards ecotourism. Thus, youth organizations working in environment include: the combination of eco-guides, the club of "environment volunteers", and the association of protectors of sea turtles.

We note in addition to these main players, organizations of producers (farmers, oyster growers, fishermen, etc.) who live in direct contact with the environment and who, daily, put more pressure on natural resources. It is estimated that these organizations are more in touch with the problems of natural resource management because they seem to depend most directly on it in the short term. But the desire to meet their present needs and the lack of awareness about the challenging environmental issues contribute to compromise the sustainability of natural resources. Other forms of organizations including the diaspora (Fadiouth Brotherhood) and the various maternal lines of Fadiouth (High Council of maternal lineages) that were previously best known in cultural promotion and development are now involved in the management

of the environment. The emergence and development of local organizations have been supported by international NGOs, but most of them really come from the grassroots.

Various environmental initiatives at all levels and the decentralization policy of the state which has transferred its prerogatives in environmental management to local governments, have promoted the emergence of local associations and environmental projects during the last decade in the town of Joal-Fadiouth. This proliferation of community-based organizations requires a better harmonization and alignment with the policies of local natural resource management. In addition, an implementation of mechanisms for dialogue involving all stakeholders should help improve the integration of initiatives of civil society actors

in the strategies set by elected officials. Such an approach should help better appreciate the contribution of all stakeholders in a sustainable participatory development.

Fight against environmental degradation and local development

There are now in Joal-Fadiouth over one hundred local organizations active in development in general and nearly two dozen claim that they work in the area of environment. Some organizations have no business on the ground and others are active only at intermittent periods. The propensity of some organizations to act more according to the offers of funding rather than according to environmental concerns partly explains this situation.

However, local organizations are actively involved against the degra-



Young girl looking for shellfish in Joal Fadiouth

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gradation of the environment given the intensity of reforestation activities they undertake with mangroves since 2003. It should be recalled that during the 80's, Joal-Fadiouth has undergone major reforestation campaigns over an area of 16 ha including the area of Finio. The reforestation of this area which has mobilized the entire population has contributed to reduce coastal erosion in this area which extends to the Cape.

Beyond these specific interventions, local strategies of local development, for the medium or the long term are put in place. Many organizations, supported by development partners, helped to influence sectors of local development in general. Those interventions essentially focus on issues relating to poverty and sustainability.



Joal Fadiouth mangrove swamp



Joal Fadiouth mangrove swamp

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Area	Activities	Organization
ENVIRONMENT	-Radio programmes / awareness raising and outreach	- « la Côtière » Radio - The club «volunteers of the environment » - « Dynamique Femme » EIG
	-Reforestation of mangroves	- Volunteer of the environment « Cyprien Sène » - Association of Ecoguides - « Femme Coquillage » EIG - « Fata Ndébane » EIG - « Dynamique Femme » EIG - « Nbin Rimi » CBO
	-Site Protection (mass of shellfish)	- Association «Nbin Mbaktou»
	- Protection of marine turtle	- Association of the protectors of marine turtles
	- Marine Protected Areas	- Steering committee of the MPA
	- Ecotourism	
	-Sanitation (waste collection, awareness-raising)	- Association of Ecoguides - « Nbin Rimi » CBO - «Marie Immaculée» Association - Association « Diam bougoum »
	- waste collection,	- /Tostan
	- Processing of seafood products (fish, cymbium, arches)	- « Femme Coquillage » EIG in partnership with ENDA - « Nannir » EIG - Association of the protectors of marine turtles - « Diam bougoum » Association
	- GIE «Nannir»	
- Association of the protectors of marine turtles	- /Tostan	
FISHERIES	- Creation of areas to stock arches	- EIG « Femme Coquillage » in partnership with ENDA
	- Oyster farming	-EIG of oyster farmers
	- Research on the conservation and canning of seafood products	- « Femme Coquillage» EIG /Enda-Gret-ITA-IRD
	- Exploitation of algae (hypnea nusciformis)	- n.i. / CRDI
	- Training on aquaculture	-EIG of oyster farmers
AGRICULTURE	- Processing of local cereals	- EIG « Femme Coquillage » - « Sine Sine » Association
TOURISM	- Ecotourism	- Association of ecoguides - EIG of oyster farmers
	- Sale of sculpturs, shelfish / handicrafts	-Association of antique dealers
EDUCATION	- Construction de case des enfants	- Association Joal-Fadiouth Women for the protection of Children
	- Literacy	- GIE «Dynamique Femme»
	- Environmental Education	- Elementary schools in Joal / American Peace Corps

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Partnership

The intensity of the activities relating to resource management stems from a strong partnership between NGOs, most of whom are international NGOs, and local organizations. These NGOs are often very active in the field of environment and sustainable development and work for better management of natural resources with the involvement of local actors. The partnership is through programs and projects for which the NGOs are seeking to ensure better impact of their initiatives on target groups as well as in terms of efficiency and in terms of sustainability and promoting transparency and good local governance. In addition, partnerships with local organizations and associations can lead local populations to develop behaviors that are more consistent with sound management of natural resources. Strengthened by awareness campaigns and capacity building programs, this partnership has helped improve the participation and empowerment of local actors towards the sustainability of the activities.

Conclusion

Local organizations have significantly contributed to the action against environment degradation through development projects integrating actions related to natural environment regeneration, awareness programs and training. They have gained this experience as a valuable capital for

community development and mass facilitation. In addition to their ability to mobilize grassroots, local organizations have shown the capacity to follow up with post-project activities. However some qualities such as efficiency need to be put into perspective and the need to build the capacity of these organizations is clear.

There are also barriers that prevent local organizations and associations of non-governmental actors from fully playing their role. These mainly include:

- The difficulty they face in sharing their respective advantages;
- The lack of coherence and cohesion in their interventions;
- Lack of expertise and capacity to make alternative proposals to the partners;
- The lack of organizational and operational capacities;
- Weak coordination mechanisms;
- The wait-and-see attitude of local civil society organizations vis-à-vis their partners reflects the image of shy organizations and can be interpreted as a lack of real commitment.
- The prevalence of an unhealthy spirit of competition to the detriment of the search for synergy of actions for development organizations that pursue the same goal.

Partners' expectations vis à vis local organizations are huge today because an important part of local development policy of the country is based on them. Indeed, administrative decentralization makes local communities key actors in local development. The

management of natural resources that contribute to an important part in the national economy is realized at the local level. Local non-governmental actors are therefore called upon to play or to make others play a role of contre-pouvoir at the local level, so that good governance prevails and is also applied to natural resource management.

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ECOSYSTEM SERVICES: THE CASE OF THE MANGROVES OF JOAL-FADIOUTH

Ecosystems have been degraded at a significant rate. The recent "Millennium Ecosystem Assessment" concluded that 60% of the studied ecosystems have been severely degraded or used unsustainably. This has significant consequences on development. The poorest groups and most vulnerable, particularly those living in rural areas tend to be the most dependent on ecosystem services.

Moreover, the poor have no ability to access alternatives to the services provided by ecosystems. In addition, ecosystem services are a direct source of wealth in developing countries, through forest products and fishing.

The services provided by ecosystems occupy a much smaller place in policy and decision-making compared to that occupied by agricultural production, even though they form the basis of rural activity and capital income. The current status assigned to ecosystem services comes mainly from a lack of information on the biology, ecology and especially the economic evaluation of these resources.

It is within this framework, and in the context of its interventions against environmental degradation and capacity building to better manage natural resources, through a training workshop (March 2010), that Enda insisted to:

- Improve the understanding of ecosystems in terms of services they provide for sustainable development and poverty reduction
- Positively influence users and decision makers through a better understanding of ecosystem services and their value, to sustainably manage these ecosystems.

Ecosystem services

The function of an ecosystem depends on its ability to provide goods and services that satisfy human needs directly and indirectly (de Groot, 1992).

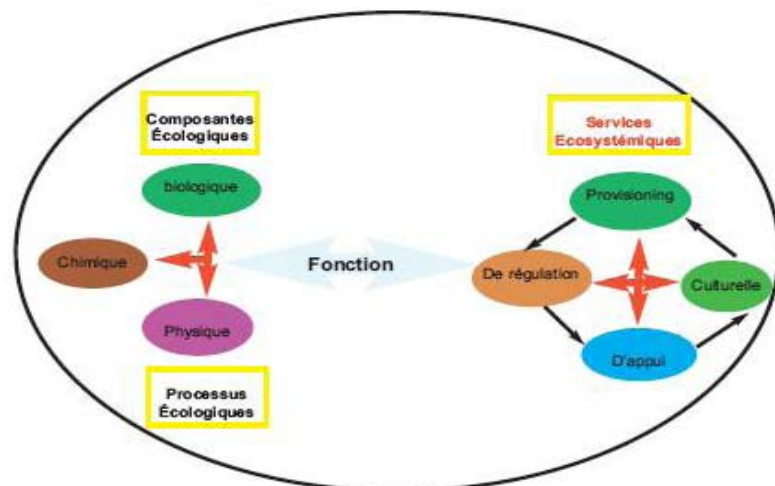
Ecosystems perform four types of functions:

Production function:

- Food (fish, shellfish, mongooses, basic substance to dye)
- Energy (firewood)
- Genetic Resources
- Medical Resources
- Ornamental Resources
- Economic activities (agriculture, fishery, processing, collection, etc.).

A regulatory function:

- Prevention against erosion (soil fixation, sediment input)
- Prevention against flooding (limiting the effects of waves)
- Climate regulation and winds (CO2 sequestration, milder climate, windbreak, etc.)
- Maintenance of biodiversity (species turnover, the presence of rare species: mongoose, hyenas, jackals, kingfisher, marabout, etc.).



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A support function:

- Wildlife habitat (habitat, nursery areas, hiding and resting places, etc.).
- Food function (the availability of the food chain)
- Nutrient cycling of shellfish

Cultural & recreational functions

- Recreational value and tourism (tourism, stroll through the mangrove, safari, panoramic and peaceful views, density, natural setting, swimming, games, fishing, recreation etc.).
- Inspiration for art, folklore
- Identity and cultural heritage (a symbolized place of worship)
- Spiritual and traditional information
- Education and Science

2. The services (or value) of the ecosystem are the benefits people obtain from ecosystems (Millennium Ecosystem Assessment, 2003 & 2005).

All the above functions are not used to the same extent by people, for example, people tend to favor the production function rather than the regulatory function.

In Joal, a good knowledge of ecosystem services, such as mangroves, could promote the sustainable use of wild fauna (fish stocks, birds), plants



Woman in Joal Fadiouth mangrove

(*Avicennia*, *Rhizophora*) and result in environmental protection. This would lead to the adoption of appropriate national and local policies and better planning by encouraging investment and research by local communities, NGOs, government and research institutions. In other words the values removed from the ecosystem (that is to say the benefits to people) are different depending on the functions performed. So there is a hierarchy of values according to the uses made of the ecosystem.

Typology of values associated with ecosystem services

The ecosystem services are valued according to their use. In Joal, with the mangrove ecosystem, populations derive several benefits from the various functions of the ecosystem to meet their survival needs, economic and sociocultural. There are five types of values, depending on the mode of use:

- direct use values : these are the values that are taken directly from the use of the resource. In the case of a forest or mangrove, these may be the food obtained for fish resources (in the case of the mangroves), the biomass, the recreational benefit, the healing plants, etc. With regard to land, these values relate to the values of the products drawn directly from the use of the land such as crops or grazing.
- indirect use values: These values come from the functional advantage of the natural resource. They are related to processes involving the biodiversity resource. For some eco-



Mangrove swamp in Joal Fadiouth

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systems such as mangroves, it is the climate regulation, soil conservation and ecological interactions. But in general, for land, indirect use values will be effective only for lands located in wet areas (navigation, for example) or those involved in the protection of other adjacent lands.

- option value: it is the direct and indirect values placed on possible future uses of the resource. Apart from the values that are related to their use, individuals can place a value on heritage even if they make no direct or indirect use of it, or even if they attach no alternative value to it. These values include:

heritage value: it derives from the desire that people have to pass an inheritance to future generations or their offspring (inheritance, legacy). This value is important in the case of rural land where the land of the ancestors has value precisely because it is part of the heritage that was bequeathed to the offspring, thus forging the family unit. In a mangrove ecosystem, the community wants, for example, to leave this heritage to its future generation

existence value: intrinsic value attributed to an environmental good, just knowing it exists. Environmentalists, for example, find themselves soothed by the simple fact of keeping certain animals considered rare or by some process of biodiversity



Joal Fadiouth lagoon

even though they would not have a direct benefit on their lives. They attach to the property an existence value, which is in some cases very important. However, for land, this value is almost zero. The breakdown of the economic value of those values allows to better distinguish the different motivations of the parties with respect to an environmental issue and the conflicts that may arise in terms of "competition of use". For example, fishermen living near a marine protected area (MPA) are mainly interested in the direct use value of fishery products. They care very little about option, existence or heritage values.

In contrast, the direct use value of mangrove timber does not interest them beyond measure, and it is their heritage that remains in question. For its part, the public authority will be more concerned about the option value of the MPA. Environmentalists, meanwhile, will pay attention to the existence value and indirect use value of the MPA.

d'usage indirect de l'AMP.

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	Production services	Cultural services, recreational & non-extractive uses	Regulatory services	Support services and non-use values
Mangrove ecosystem	<ul style="list-style-type: none"> - Resources from the mangroves: Firewood, the basic substance of dye, fish, shellfish, mongooses - The socio-economic activities carried out around the mangrove fishing, gathering, processing, trade in oysters, timber trade, tourism. -The number of people working in these activities: nearly 80% of the population depends on these activities. - The role of these activities in providing income and job creation is considered fundamental 	<ul style="list-style-type: none"> - Cultural services offered by the mangroves: a symbolized place of worship. - The recreation of the mangrove ecosystem, tourism, walking in Bolong, safari, peaceful panoramic views, density, natural setting, swimming, games, recreational fishing - The role of mangroves in the maintenance and preservation of the social system: uniqueness of groups of exploitation of fisheries resources, cultural identity, physical and gynecological bathroom mystical (mental rehabilitation), initiation, harbinger of the rainy season (propagule) -The role of mangroves in food security: continued provision of food, biological recovery. 	<ul style="list-style-type: none"> - Regulating services of the mangrove ecosystem can: prevent against erosion, prevent against floods (limiting the effects of wave), the water purification by filtration, CO2 sequestration, light wind, the softening climate, pollution control, setting the ground. -the role of mangroves in maintaining the ecosystem: maintaining biodiversity (species turnover), ecosystem balance, sediment input. - Rare species found in mangroves: mongoose, hyena, jackals, kingfishers, marabouts 	<ul style="list-style-type: none"> - Support services of the mangrove species are: habitat, nursery areas, places for laying eggs, the availability of the food chain. - Property option for mangrove ecosystem: application for gynecologic future, the preserved species of fauna and flora, the benefits of responsible fishing. The property bequeathed: all goods and services of mangrove, the band reserved on the road from the fields, reforested areas, sites of birds. -The advantages associated with the presence of mangroves: safeguarding the economic and social equilibrium, existence of rare species, place of knowledge and information.
Marine Protected Areas (MPA) Ecosystem	<ul style="list-style-type: none"> -The resources from the MPA are: dead wood, shellfish, timber and firewood, wild animal resources, fodder for livestock. - socio-economic activities carried out around the mangroves are: fishing, gathering, processing, trade, tourism -the number of people working in these activities is between 35 and 40% for a population of about 40,000 people. -activities around the MPA play a fundamental role in providing income and job creation. 	<ul style="list-style-type: none"> - The ecosystem of the MPA is a community that is home to a place of cultural or ceremonial libation: the Fadiouth Baobab and the King of the sea were cited as examples. -recreational services of the ecosystem are: ecotourism, hiking and walking in the marine bolong, safari, angling, aesthetic pleasure, joy, landscape, environment, existence of biological diversity. -the role of MPA in the maintenance and preservation of the social system: lifestyle, improvement of socio-economic lifestyles, physical and mental health, maintenance of the population, conservation information and traditional knowledge, cultural and religious identity . -the role of MPAs in food security: continuous availability of goods and services, availability of resources, increasing the size of the species of fish. 	<ul style="list-style-type: none"> - Regulating services of the MPA ecosystem are: CO2 sequestration, water purification, pollution control. - The role of MPA in maintaining the ecosystem: the fight against flooding, soil fixation, the fight against erosion, conservation of endangered species. -rare species found in the MPA are: sea turtles, manatees, burbot 	<ul style="list-style-type: none"> - MPA ecosystem has placed the following options: no extraction of sacred sites, fishing regulations, rational picking, extraction of timber prohibited. -property bequeathed to the MPA ecosystem: people want to send all goods and services to future generations (e.g., genetic resources, a better living environment) -Advantages related to the existence of the MPA: the existence of rare species, processes, biodiversity, climate regulation. Support services of the MPA ecosystem: species habitat, spawning and nursery, resting place, hiding place, food chain.
Terrestrial ecosystems	<ul style="list-style-type: none"> - Resources from terrestrial ecosystems: livestock fodder, medicinal plants, timber service to make drying racks and frames for the repair of the boxes, firewood, salt for packaging and food, the bird life, beekeeping, crustaceans (crabs), non-timber forest products (baobab fruit, jujube, etc.). -activities around these terrestrial ecosystems are gathering and the processing (sheet of baobab fruit, the fruit of Avicenna), hunting for crabs, processing and trade of fishery products (dried fish seafood called 'pagne', 'yet', 'tuffa') tourism (site visit of granaries built on stilts, marine cemetery 'pangol' site,) sale of crafts (masks, beads, woven cloth) - The number of people working in these terrestrial ecosystems: all segments of the population (about thousands of people). - The role of these activities in providing income and job creation is considered essential by the group. 	<ul style="list-style-type: none"> - Cultural services provided by terrestrial ecosystems: a meeting place available to traditional (Ohet) cultural ceremony (prayer for a good rainy season) places of libation (A thiour) -recreational services of terrestrial tourism, safari, tour, hunting, aesthetic pleasure, joy, well-being. - The role of terrestrial ecosystems in maintaining the social system: integrated component in the way of life; cultural and religious identity, physical and mental health (place of purification and pharmacopoeia) -the role of terrestrial ecosystems in food security: availability of ongoing consumer goods and services, annual operating activities 	<ul style="list-style-type: none"> ecosystem services in terms of regulation are: CO2 sequestration; infiltration (a sponge), pollution (biodegradable household waste); - The role of terrestrial ecosystems in maintaining overall ecosystem: soil fixation, the fight against wind and water erosion -rare species in terrestrial ecosystems: mongoose, hyenas, jackals, etc. marabouts. 	<ul style="list-style-type: none"> -land ecosystems have put the following options: no extraction of sacred sites, rational gathering, and prohibited extraction of timber. - bequeathed property of land ecosystems: people want to send all goods and services to future generations (e.g., genetic resources, a better living environment) -Advantages related to the existence of terrestrial ecosystems: the existence of rare species, processes, biodiversity, climate regulation. Support services of terrestrial ecosystems: species habitat, spawning place and nursery, resting place, hiding place, food chain

GLOBALS NEWS

NEW PUBLICATIONS

FLORA AND FAUNA OF THE LAGOON OF JOAL FADIOUTH

The mangrove is one of the most productive ecosystems on the planet in terms of biodiversity. It serves ecological, economic and social functions to the communities and provides a basic capital for eco-development.

Joal Fadiouth populations like those of the Saloum Delta are highly dependent on the fauna as well as the flora capital of the mangrove.

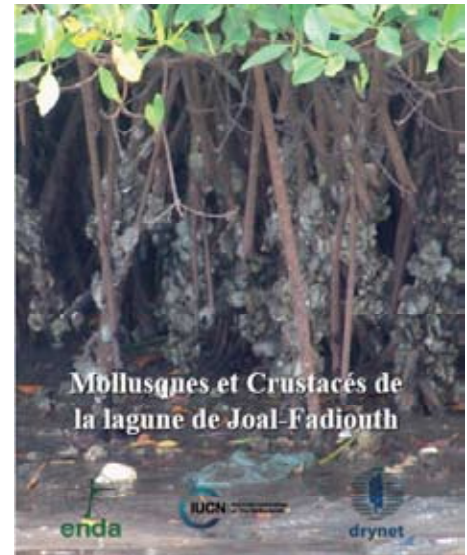
The mollusks, especially arches and oysters, are exploited there, due to the existence of a local market that is beneficial to all social groups including women. The byproducts of these mollusks (shells) are used to extend the living space.

Thus the mangrove ecosystem is both rich and complex, and its operation in a logic of social change and sustainable development first requires a good knowledge of species, then, involvement and education of local communities and other actors for the conservation and rehabilitation of these wet areas, and finally a local institutional framework that can ensure participation, the correct positioning of the actors and, more generally, good governance.

To the work undertaken for a better understanding of the economic value of the mangrove ecosystem, there is a need to add this inventory of fauna and flora in Joal-Fadiouth in the logic of capacity building for environmental monitoring of local organizations. For a better understanding of the phyto-biodiversity of the lagoon, and through the inventories that have been made in these areas, we have assessed the floral diversity of the lagoon.

The Mangrove

Like all mangroves in the world, that of Joal-Fadiouth has a low phytobiodiversity with only 4 (four) species: *Rhizophora racemosa germinans* (L.) L. (white mangle) *Conocarpus erectus* L. (gray mangrove) and *Laguncularia racemosa* (L.) CF Gaerth (black mangrove).



SHELLFISH FROM THE LAGOON OF JOAL FADIOUTH

According to the terms of the study, all of the main species of shellfish from the lagoon were reviewed with an emphasis put on the species consumed by the population. These species, despite the amount of extracted individuals are grouped into a few categories: Andara (98%), *Crassostera*, *Semifisus*, *Murex*, *cymbium*, *Tympanotus* for molluscs and crustaceans for *Callinectes*.

The *Uca Tangeri*, despite its abundance, is not consumed.

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