

# Fighting sand encroachment

## Lessons from Mauritania



**Cover photo:**  
Mechanical dune stabilization: installing plant matter  
M. Ould Mohamed

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# Foreword

Mauritania is one of the Sahelian countries most severely affected by the repeated periods of drought that have been occurring since the end of the 1960s. Desertification control has always been a national priority and a central concern of successive governments, taking the practical form of various development plans and programmes over the past four decades.

After ratification of the United Nations Convention to Combat Desertification (UNCCD), in June 2001 Mauritania formulated a National Action Plan to Combat Desertification (PAN-LCD), adopting an integrated, participatory approach. As in other countries in the Sahelian region, constantly increasing desertification is due to various natural, human, juridical and socio-economic factors, which combine to cause degradation of soil, forest resources and biodiversity.

Implementation of the PAN-LCD is based on various fundamental principals, including:

- adoption of an integrated approach covering physical, biological, institutional and socio-economic aspects;
- integration of poverty reduction into desertification control programmes;
- coordination of activities to be carried out under the PAN-LCD with those of other United Nations framework conventions, such as the Convention on Climate Change and the Convention on Biological Diversity;
- more closely targeted international assistance in order to respond better to local needs in the framework of partnership agreements;
- the participatory approach, with close collaboration of grassroots communities, especially local government and non-governmental organizations;
- encouragement of scientific research and the use of its results in the rehabilitation of degraded land and the improvement of agrosilvopastoral production.

The present publication has been produced within the framework of FAO support for the Mauritanian Government's efforts to combat desertification, and reflects results and lessons learned during implementation of the Support for the Rehabilitation and Extension of the Nouakchott Green Belt Project with financing from the Walloon Region and the support of Prince Laurent of Belgium.



**J.A. Prado**

Director, Forest Assessment, Management and Conservation Division  
FAO Forestry Department

# A prologue from Prince Laurent of Belgium

What picture can we give our children today of our relationships between north and south, which are so often tarnished by a spirit of imperialism and a poor knowledge and understanding of other cultures that too often are foreign to us? The spectacular progress of science and knowledge in recent decades should have allowed us to know each other better, thus enabling us to join together to envisage a more sustainable outlook for the future. The foundations of our western civilization and knowledge come from other continents, including of course Africa.

Today, we sometimes have to realize that when we withdraw into ourselves this gives rise to relationships based on force and thus to immense frustration. However, if we take the time to reflect on nature, it teaches us that the party we believe to be the strongest is not always the one that wins out over the weakest.

I was deeply imbued with the knowledge, love and passion for forests of my spiritual father, Raymond Antoine, Professor Emeritus of Forest Engineering at the Catholic University of Louvain, who is always present in my thoughts. I also love to stroll through the works of my friend Jean-Marie Pelt, Professor Emeritus of Plant Biology and Pharmacology at the University of Metz, for whom I have great admiration.

Professor Pelt is particularly interested in the relationships of attraction and repulsion among plants and animals in a single ecosystem. Based on his observations, he teaches us about the relations between the Douglas fir and the birch. These two trees exchange carbonaceous sugars through almost invisible mycelial filaments. As the Douglas fir has needle-shaped leaves throughout the year, which ensure its photosynthetic activity, it is able to pass on carbonaceous sugars to a leafless fellow tree of another species. During its vegetative period, the birch provides the same service to the Douglas fir. What a splendid symbiosis we see in the plant world with the fragile-looking fungus, which brings the tree the water and mineral salts it needs, and the tree, which in return offers the organic nutrients the fungus needs for its survival. And of course there is the orchid species with no chlorophyll whose development and survival is vitally linked to the beech tree through similar mycelia.

All this shows us how much more attention we should pay to ecology and the environment. I am convinced that many of our societies' problems could find solutions in the mechanisms underpinning nature.

The relationship between trees, development and the maintenance of a sustainable agriculture is not yet sufficiently well established in our consciousness. It has been shown in Europe that forest and agricultural monocropping systems produce much less timber and food than does a harmonious combination of these two elements, as found in agroforestry. It is still too little known that trees generate soil and thus allow the development of sustainable agriculture, and also that they prevent erosion and conserve water.

However, in the greater Maghreb region, where pastoralism is the predominant system, silviculture provides the guarantee of sustainable agriculture. If we are to attain this ambitious objective, we have to establish an agrosilvopastoral centre within the region to facilitate scientific exchanges between north and south and among the countries of the region.

This undeniably leads us to realize that the very concept of the environment is the source of a better understanding of our various cultures, and will hence generate peace.

Without a doubt, the two main challenges facing our planet will be, on the one hand, the development of renewable energies that are accessible to one and all and, on the other, the reforestation of forest land.



I was delighted that the project I had presented to His Excellency Maaouiya Ould Sid'Agmed Taya, then President of Mauritania, was given major priority both by him and his country, and that he entrusted me with seeing it through to completion.

The present President, His Excellency Mohamed Ould Abdel Aziz, has assured me of his support and complete collaboration in maintaining the work carried out.

I would thank the partners who have enabled me to achieve my objectives: FAO and the Walloon Region of Belgium, together with the Mauritanian Ministry of the Environment and Sustainable Development.

A handwritten signature in black ink, appearing to read 'Laurent', with a long, sweeping flourish extending to the right.

His Royal Highness,  
Prince Laurent of Belgium

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# Abbreviations, acronyms and terminology

|                  |   |
|------------------|---|
| <b>AFESD</b>     | Arab Fund for Economic and Social Development                       |
| <b>CILSS</b>     | Permanent Inter-State Committee for Drought Control in the Sahel    |
| <b>DANIDA</b>    | Danish International Development Agency                             |
| <b>FAO</b>       | Food and Agriculture Organization of the United Nations             |
| <b>GTZ</b>       | German Agency for Technical Cooperation                             |
| <b>IFAD</b>      | International Fund for Agricultural Development                     |
| <b>LWF</b>       | Lutheran World Federation   |
| <i>moughataa</i> | prefecture  |
| <b>NGO</b>       | non-governmental organization                                       |
| <b>PANE</b>      | National Action Plan for the Environment                            |
| <b>PAN-LCD</b>   | National Action Plan to Combat Desertification, Mauritania          |
| <b>PDLCD</b>     | Desertification Control Master Plan                                 |
| <b>PLEMVASP</b>  | Sand Encroachment Control and Agrosilvopastoral Development Project |
| <b>PMLCD</b>     | Multisectoral Desertification Control Programme                     |
| <b>UM</b>        | ouguiya (Mauritanian currency)                                      |
| <b>UNCCD</b>     | United Nations Convention to Combat Desertification                 |
| <b>UNDP</b>      | United Nations Development Programme                                |
| <b>UNEP</b>      | United Nations Environment Programme                                |
| <b>UNSO</b>      | United Nations Sudano-Sahelian Office                               |
| <b>US\$</b>      | United States dollar  |
| <b>WBI</b>       | Wallonie-Bruxelles International                                    |
| <b>WFP</b>       | World Food Programme  |
| <i>wilaya</i>    | administrative district   |