



Africa Rice Center (WARDA)



**Curriculum for Participatory Learning and  
Action Research  
(PLAR)**

for

**Integrated Rice Management  
(IRM)  
in Inland Valleys of Sub-Saharan Africa**



***Technical Manual***

**Marco C.S. Wopereis, Toon Defoer, Philip Idinoba, Salif Diack  
and Marie-Josèphe Dugué**

## Africa Rice Center (WARDA)



The Africa Rice Center is an autonomous intergovernmental agricultural research association of African member states and one of the 15 international agricultural research centers supported by the Consultative Group on International Agricultural Research (CGIAR).

Its mission is “to contribute to poverty alleviation and food security in Africa, through research, development and partnership activities aimed at increasing the productivity and profitability of the rice sector in ways that ensure the sustainability of the farming environment.”

The modus operandi of the Africa Rice Center is partnership at all levels. The Africa Rice Center’s research and development activities are conducted in collaboration with various stakeholders—primarily the national agricultural research systems (NARS), academic institutions, advanced research institutions, farmers’ organizations, non-governmental organizations (NGOs) and donors—for the benefit of African farmers, mostly small-scale producers, as well as the millions of African families for whom rice means food.

The development of the ‘New Rice(s) for Africa,’ or NERICA(s), for which WARDA was conferred the CGIAR King Baudouin Award, is bringing hope to millions of poor people in Africa. This scientific breakthrough of crossing African with Asian rice species has helped to shape the Center’s future direction, extending its horizon beyond West and Central Africa into Eastern and Southern Africa. The creation of NERICA rice and its expected contribution to food security and income generation in Sub-Saharan Africa are in harmony with the spirit and sustainable-development aspirations of the World Summit on Sustainable Development (WSSD), the Tokyo International Conference on Africa’s Development (TICAD), the Millennium Development Goals (MDGs), and the New Partnership for Africa’s Development (NEPAD).

The Africa Rice Center hosts four networks and consortia—the African Rice Initiative (ARI), the Inland Valley Consortium (IVC), the International Network for Genetic Evaluation of Rice in Africa (INGER-Africa), and the West and Central Africa Rice Research and Development Network (ROCARIZ)—all charged with ensuring the widespread and rapid dissemination, adoption and diffusion of new rice cultivars across the various rice ecologies found in Africa.

The Africa Rice Center has its headquarters in Côte d’Ivoire and four regional research stations—one covering the Sahel and located near St-Louis, Senegal, one at the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, the third at Dar-es-Salaam, Tanzania, and in Cotonou, Benin, where the center also has its temporary headquarters.

**For more information, please visit [www.warda.org](http://www.warda.org)**

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## IFAD—International Fund for Agricultural Development



IFAD, a specialized agency of the United Nations, was established as an international financial institution in 1977 as one of the major outcomes of the 1974 World Food Conference. The main objective of the Fund is to directly give funds and mobilize additional resources for programmes facilitating economic promotion of the rural poor particularly by increasing the productivity of agricultural and extra-agricultural activities.

## CBF—Inland Valley Consortium



IVC was founded in 1993 to promote sustainable development of inland valleys in Sub-Saharan Africa. The Consortium groups national and international agricultural research institutes and development agencies. Since April 1999, the Consortium is part of WARDA and works with 10 West African countries (Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Guinea, Mali, Nigeria, Sierra Leone, Togo) and 8 international institutions (WARDA, IITA, ILRI, FAO, WECARD/CORAF, WUR, CIRAD, IWMI). Each of the member states has a National Coordination Unit (NCU) that brings together—under the direction of a national coordinator—the representatives of the institutions involved in the development of inland valleys. Donors of the IVC are mainly The Netherlands (DGIS), France (Ministry of Foreign Affairs), the Common Fund for Commodities (CFC) and the European Union.



AGA KHAN FOUNDATION

Founded by His Highness the Aga Khan in 1967, the Aga Khan Foundation (AKF) has been experimenting with, and implementing, innovative solutions to development challenges for over 40 years. In every undertaking, the overriding goal is to assist in the struggle against hunger, disease, illiteracy, ignorance and social exclusion. Central to all these efforts have been inclusive, community-based development approaches, in which local organisations identify, prioritise and implement projects with the Foundation's assistance. Within this ethos, AKF focuses on five major areas: rural development, health, education, civil society and the environment. For more information, please see [www.akdn.org/](http://www.akdn.org/).



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**Africa Rice Center (WARDA)**

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Cotonou

Benin

Telephone (229) 21350188

Fax (229) 21350556

E-mail [warda@cgiar.org](mailto:warda@cgiar.org)

Website <http://www.warda.org/>

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# Foreword

The inland valleys of Sub-Saharan Africa are a major asset for the region's food security and they are particularly well adapted for rice growing. However, these land resources (an estimated 85,000,000 ha) have often not been developed because of their extreme diversity and because of the difficulties related to water management in such systems.

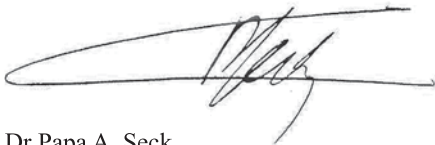
Nonetheless, sustainable intensification of inland valleys seems to be a very promising way to close the increasing gap between rice production and rice consumption on the continent, and also to help stabilize the use of the fragile upland soils.

The idea of this manual, and of the associated *Facilitator's Manual*, stems from the observation that West Africa's inland valleys are very complex and that there is a chronic lack of communication among farmers, extension services and researchers. It is a product of several years of fieldwork coordinated by WARDA in close collaboration with ANADER (*Agence nationale d'appui au développement rural*, Côte d'Ivoire), and agricultural research and development services, including NGOs, in Benin, Côte d'Ivoire, The Gambia, Ghana, Guinea, Mali, Nigeria and Togo.

This *Technical Manual* is targeted at fieldworkers of research and extension services (both government and non-governmental) to help them stimulate field-based discussions about rice cropping in inland valleys. This manual deals with all aspects of rice cropping, from land preparation up to the end-of-season evaluation after harvest, using an integrated rice management approach.

We hope that later issues will offer a more complete curriculum on the integrated management of all the natural resources in inland valleys. Some references already deal with such topics. Furthermore, we would like to encourage you to adapt these references to your own working conditions and to add further material as you see fit.

We wish to thank the staff from WARDA and all the agricultural research and development services in Benin, Côte d'Ivoire, The Gambia, Ghana, Guinea, Mali, Nigeria and Togo, who have contributed to this important work.



Dr Papa A. Seck  
Director General  
Africa Rice Center (WARDA)  
Cotonou  
Benin