



# ACP Science and Technology Programme

AFS/2009/219015

**AFROweeds**  
African weeds of rice

## ANNEX VI INTERIM NARRATIVE REPORT

16<sup>th</sup> October 2010



(P. Grard - Cirad)



AfricaRice



Thomas Le Bourgeois – Cirad  
Pierre Grard – Cirad  
Pascal Marnotte – Cirad  
Jonne Rodenburg – AfricaRice

## ANNEX VI

### INTERIM NARRATIVE REPORT

- This report must be completed and signed by the Contact person
- The information provided below must correspond to the financial information that appears in the financial report.
- Please complete the report using a typewriter or computer (***you can find this form at the following address <Specify>.***)
- Please expand the paragraphs as necessary.
- ***Please refer to the Special Conditions of your grant contract and send one copy of the report to each address mentioned***
- The Contracting Authority will reject any incomplete or badly completed reports.
- The answer to all questions must cover the reporting period as specified in point 1.6

#### 1. Description

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1.1. Name of beneficiary of grant contract:

CIRAD Centre de Coopération Internationale en Recherche Agronomique pour le Développement  
(International Cooperation Centre for Agronomic Research and Development)

1.2. Name and title of the Contact person:

Dr Thomas Le Bourgeois, Weed scientist

1.3. Name of partners in the Action:

Africa Rice Centre (AfricaRice ex. WARDA)

1.4. Title of the Action:

African Weeds of Rice (AFROweeds)

1.5. Contract number:

AFS/2009/219015

1.6. Start date and end date of the reporting period:

16<sup>th</sup> of October 2009 – 15<sup>th</sup> of October 2010

1.7. Target country(ies) or region(s):

West, Central and East Africa

1.8. Final beneficiaries &/or target groups<sup>1</sup> (if different) (including numbers of women and men):

The target groups are weed scientists working at universities or national research institutions in Africa, agronomists working at national research institutions in Africa and technicians working for development companies and structures that manage African rice crop production. Agronomy and weed science students are also an important target group as the tools and information generated by AFROweeds will be used to back up training and teaching.

To date, 12 weed scientists (including one woman) working at universities or national research centres have sought to participate directly in the project (Annex 3).

The final beneficiaries are the African rice growers who should be able to enhance rice crop production through better weed control, and the populations of participating countries who should gain access to larger national rice crop production, making them less dependent on rice imports.

Furthermore, the project is conducted in conjunction with national farming research and development systems. The tools and information that will be made available on the AFROweeds website should help political and institutional farming decision-makers, and more specifically African rice crop decision-makers, with their choices

1.9. Country(ies) in which the activities take place (if different from 1.7):

The AFROweeds project concerns those countries of West, Central and East Africa with significant rice crop productions. Initially, since the AfricaRice partner is established in Benin, Senegal and Tanzania, these countries were given priority.

When the initial workshop was prepared to launch the AFROweeds project in February 2010 in Benin, weed scientists and agronomists implicated in rice weed control were consulted. This resulted in a first group of weed scientists from various countries seeking to participate in the project. The countries concerned are: Benin, Senegal, Côte d'Ivoire, Mali, Burkina Faso, Nigeria, Ghana, Chad, Kenya, Uganda and Tanzania.

Tanzania is the focus of a great deal of work because the AfricaRice partner's team has established itself there permanently since June 2009.

Côte d'Ivoire is also the focus of considerable work, notably through Mr Frédéric Kouamé's thesis on rice weeds which is being supervised by Dr Ipou Ipou of the University of Cocody–Abidjan and jointly overseen by Mr Marnotte and Dr Le Bourgeois, weed scientists with Cirad.

## **2. Assessment of implementation of Action activities**

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Remarks on assessment of implementation of Action activities:

AfricaRice is an institution that cannot bridge-finance activities. Activities and project personnel recruitment procedures therefore could only be implemented from February 2010 and the research assistant (Gérald Kyalo) and the technical assistant (Kobusingé Aloys) were only recruited on 1 May 2010 and 1 June 2010, respectively.

Furthermore, the orders for computers and photographic material and their dispatching to Dar es Salaam took a long time since they only became available in July 2010.

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<sup>1</sup> “Target groups” are the groups/entities who will be directly positively affected by the project at the Project Purpose level, and “final beneficiaries” are those who will benefit from the project in the long term at the level of the society or sector at large.

## 2.1. Activities and results

Please list all the activities in line with Annex 1 of the contract during the reporting period

### ***Activity 1: Project launch, preparation of the website and preparation of the project exchange platform and modalities***

#### **Activity 1a: Open the project website**

Create an effective communication tool on the AFROweeds project using a project-dedicated website. The AFROweeds project website came online during the initial workshop in February 2010 and can be found at the following address:

<http://www.afroweeds.org>

The site has a public space where the project is presented and information and project results are made available to the general public:

- Presentation of project objectives, partners and grant suppliers.
- List of rice weed species selected by all the partners during the initial workshop.
- A bibliographic summary of rice weeds and rice weed control in Africa.
- At a later stage, weed species summary information forms generated from the AFROweeds database will also be made available; it will also be possible to access identification assistance tools that will be developed during the project.

The project website is operational and can be accessed by the general public (project partners and target players). It is updated regularly.

#### **Activity 1b: Open the Web 2.0 participatory tools**

Implementation of a participatory space on the AFROweeds website.

This activity was postponed until the beginning of year 2 of project execution since tool selection and adaptation has not yet been completed. In the current state of development, partners exchange data via email or via data storage and sharing spaces.

For practical and efficiency reasons, it has been decided to recruit the Web manager at Cirad in Vietnam instead of AfricaRice in Benin. So that he will work under Pierre Grard supervision (Cirad Biodiv and Informatics expert of the project based in Vietnam).

#### **Activity 1c: Bibliography**

Inventory of the books and papers concerning weeds and the weeding of rice crops in Africa and published by AFROweeds project partners (Cirad and AfricaRice)

To date, the inventory includes:

- 2 field guides for weed recognition
- 3 multimedia products (CD-ROMs)
- 10 scientific papers
- 12 conference communications
- 1 student dissertation
- 4 technical reports.

The list can be accessed on the website: <http://www.afroweeds.org>

It is updated regularly.

**Activity 1d: Prepare and organize an initial workshop in Cotonou (Benin)**

Preparation and organisation of the AFROweeds initial workshop in Cotonou, Benin.

The AFROweeds initial workshop was held at the AfricaRice station in Cotonou, Benin from 1 to 5 February 2010.

The full report is provided in Annex 1.

The workshop brought together both project coordinating and partner teams (Cirad and AfricaRice) and 12 African weed scientists working for national research structures in 11 West, Central and East African countries. The weed scientists are involved in the management of weeds of rice crops in Africa and wish to share their knowledge with all the players involved in African rice production.

The following weed scientists attended: Adam Ahanchede and Pascal Adéyèmi from Benin, Joseph Ipou Ipou from Côte-d'Ivoire, Hamidou Traoré from Burkina-Faso, Sarra Soungalo from Mali, Souleymane Diallo from Senegal, Israel Dzomeku from Ghana, Friday Ekeleme from Nigeria, Oueye Boure Gaouna from Chad, Thomas Kakema from Tanzania, Gerald Kyalo from Uganda and Hottensiah Wambui Mwangi from Kenya.

Cirad was represented by Thomas Le Bourgeois (weed scientist), Pierre Grard (botanist and computer specialist), Pascal Marnotte (weed scientist) and Nora Bakker (management assistant). AfricaRice was represented by Jonne Rodenburg (weed scientist), Paul Kiepe (program 2 leader), Kazuki Saito (agro-physiologist), Amadou Touré (research assistant), Komla Azoma (technicien), Yonnelle Dea Moukoubi (PhD student), George Maina (Director of the Financial Department), Leny Medenilla (budget manager), Carine Kan (secretary) and Savitri Mohapatra (communications manager).

A list of participants is shown in Annex 3.

The list of weeds of rice that will be studied in the framework of the AFROweeds project was drawn up collectively and includes 188 species (Annex 4). The species were selected based on their frequency of occurrence in the various countries or on their detrimental effects both at regional and local levels, or on the difficulty encountered by farmers in their control.

The first participatory tools have been implemented (AFROweeds website, knowledge base, information management tables and documents, pictures, etc.) and may be accessed by partners.

For the moment, the database - that is operated locally and on a single workstation only - is managed by Cirad's team. At a later stage, it will be installed and managed in parallel by the AfricaRice team and will then be made accessible to the various partners through a network.

Different technical documents have been drawn up and distributed to partners (Annex 5) and a variety of computer files have been created for data input and management.

The summarizing of species information has been shared between weed scientists based on the species prevalence in the various countries.

When the AFROweeds project was first submitted, only one other workshop involving all partners and weed scientists was initially planned for the end of the project to present communicable identification and information tools.

During the discussions that took place at this initial workshop, it became clear that if the project was to make good progress, another workshop needed to be scheduled at the end of the first year or at the beginning of the second. This would bring together all partners and weed scientists to determine progress made with actions involving the synthesis and management of information in the project's database. The financing of the weed scientists' presence at this second workshop was not initially planned in the project's budget and a cost estimate will be drawn up. A request to change the use of certain budget headings will be made to the European Union proposing that salary amounts not used owing to the delayed recruiting of a research assistant and technician be reassigned (respecting the 15% reassignment rule), which would allow African weed scientists to be invited to the second workshop.

From an administrative perspective, N. Bakker's mission gave the AfricaRice partner a better perception and consideration of European Union expectations and operating rules. The approach was appreciated and considered useful by AfricaRice's Finance Director, Mr G. Maina.

***Activity 2: Collection and compilation of existing knowledge resources on the weeds of rice of West and East-Africa, from NARS and partners involved in the project***

***Activity 2a: Bibliography***

Review of existing information on weeds of rice in Africa in the scientific and grey literature.

An enumeration of botanical works, practical recognition field guides, identification software, scientific articles, congress communications, student dissertations and technical reports on weeds of rice or on rice crop weeding in Africa has been undertaken by the various partners.

Currently, the inventory includes:

- 14 books on botany
- 3 books on weed control in Africa
- 10 field guides for weed recognition
- 3 multimedia products (CD-ROMs)
- 61 scientific papers
- 23 conference communications
- 1 student dissertation
- 5 technical reports.

The list is available and can be accessed on the website: <http://www.afroweeds.org>

It is updated regularly.

***Activity 2b: Consultation of existing herbaria (West and East-Africa and France)***

Consultation of existing herbaria in West and East Africa and in France, focusing on species selected for the AFROweeds project.

This activity is ongoing. Various herbaria have been consulted.

The AfricaRice herbarium based at M'bé, Côte d'Ivoire (98 specimens) was transferred to the AfricaRice station in Cotonou, Benin and merged with the herbarium already present in Cotonou (56

specimens). The specimens from M'bé (98 samples corresponding to 98 species) were checked, cleaned, re-stitched and scanned.

The herbarium now contains 154 specimens corresponding to 98 species.

A new, additional herbarium is currently being set up at the AfricaRice station in Dar es Salaam in Tanzania with specimens collected during the various field trips carried out in 2010. It currently comprises 110 prepared and scanned specimens corresponding to 73 species.

Cirad's tropical weed science herbarium includes 725 specimens corresponding to 134 species of the AFROweeds project. At the moment 126 specimens corresponding to 42 species have been scanned.

Cirad's ALF herbarium comprises 1212 specimens corresponding to 113 species of the AFROweeds project. They have yet to be scanned.

Currently, specimens of only 30 AFROweeds project species are missing from the Cirad herbaria. A special effort will be made to collect these species during upcoming field trips.

The herbarium at the botanical laboratory of the University of Cocody-Abidjan comprises various specimens corresponding to 11 of the 16 species that must be studied preferentially by the Côte d'Ivoire partner. The specimens will be scanned and more extensively enumerated in the second year of the project.

During the first year, Mr Sara Soungalo of the IER in Mali collected and prepared 41 herbarium specimens corresponding to 22 of the project's species.

### **Activity 2c: Field trip preparation**

Consultative scheduling and preparation of field trips in various countries of Africa.

Pascal Marnotte (Cirad weed scientist) should have been allocated a permanent position in West Africa (Benin) in early 2010. His posting was delayed for various administrative and technical reasons inherent to Cirad and he was therefore unable to organise the field trips scheduled during the first year of the project.

These field trips will be carried out during years 2 and 3 of the project.

Thomas Le Bourgeois (Cirad weed scientist and project coordinator), who went to South Africa in September 2010 for another research project, scheduled a support field trip with the AfricaRice team in Tanzania.

The field trips to be carried out by the AfricaRice team during the first year of the project were programmed when Jonne Rodenburg visited Montpellier in March 2010 (for the Promising Young Researcher Award of the GCARD « Global Conference on Agricultural Research for Development »). Eleven field trips were thus programmed in several countries: namely in Cote d'Ivoire to recover the herbarium in M'bé, in Benin, in Uganda, in Kenya and in Tanzania. In a move to optimize budgeted costs, some field trips were planned jointly with other research projects. Only the days specifically devoted to AFROweeds project activities are therefore charged to the AFROweeds budget.

### **Activity 2d: Field trips**

Implementation of field trips to collect material (herbaria, photos), observe weed invasion and meet partners.

When the research project was first drawn up, field trips were planned preferentially in Senegal, Benin and Tanzania, the countries where AfricaRice is established. Given the collaboration undertaken with the various weed scientists involved in the project, field trip destinations were changed to cover more satisfactorily the geographic area of the project. These changes were made without altering the initial budget allocated to field trips. Furthermore, as some field trips are carried out jointly with other

AfricaRice research projects, travel expenses are optimised with some not being allocated to the AFROweeds project budget.

Table 1 outlines the various field trips in West and East Africa during the first year of the project by AfricaRice and Cirad teams.

Reports of the different field trips are provided in Annex 2.



Tableau 1: Outline of field trips during the 1<sup>st</sup> year of the AFROweeds project

Date	Employee	Place	Objectives	People met	Results
1-5/02	Rodenburg Le Bourgeois Grard Marnotte Bakker	Cotonou (Benin)	AFROweeds project initial workshop	African AFROweeds project coordinators (AfricaRice and Cirad) and partners (Annex 3)	- Project launch, definition of activities, partnerships
30/3 – 04/4	Rodenburg	Montpellier (France), Bouaké/ M'bé (Côte d'Ivoire)	- Discussions on project implementation and progress and use of the budget - Inventory of the AfricaRice herbarium at Bouaké, Côte d'Ivoire - Transfer of the AfricaRice herbarium to Cotonou and scanning - Tour of the M'bé rice farming valley to take photos of the main weeds	<ul style="list-style-type: none"> <li>• Thomas Le Bourgeois (CIRAD)</li> <li>• Nora Bakker (CIRAD)</li> <li>• Sitapha Diatta (AfricaRice, Bouaké)</li> <li>• Rose Amino N'Guessan (AfricaRice, Bouaké)</li> <li>• Francois Konan (AfricaRice, Bouaké)</li> <li>• Amadou Touré (AfricaRice, Cotonou)</li> <li>• Mariame Mariko (AfricaRice, Cotonou)</li> <li>• Moussa Nahou Coulibaly (Bouaké)</li> </ul>	- Project progress, budgeting and programming of actions with Le Bourgeois and Bakker - 98 herbarium specimens transferred to Cotonou
25-30/4	Rodenburg	Kyela (Tanzania)	- Photos taken of main weeds - Specimens collected for the herbarium	<ul style="list-style-type: none"> <li>• Mr Michael Mwampaja, (Kyela District Extension Officer)</li> <li>• Mr Elia Hosea Ghambi, (Rice farmer, Kyela)</li> <li>• Mr Bernad J. Libata, (Kyela District, Assistant</li> </ul>	- Herbarium specimens of <i>Rhamphicarpa fistulosa</i> , <i>Pycreus macrostachyos</i> , <i>Oryza longistaminata</i> and <i>Spermacoce spp.</i> - 300 photos

16-28/5	Rodenburg Kyalo	Kyela (Tanzania)	- Photos taken of main weeds - Specimens collected for the herbarium	Extension Officer)  • Mr Michael Mwampaja, (Kyela District Extension Officer) • Mr Bernad J. Libata, (Kyela District, Assistant Extension Officer)	- Herbarium specimens of <i>Ludwigia octovalvis</i> , <i>Eragrostis tenella</i> , <i>Cyperus haspan</i> , <i>Rhamphicarpa fistulosa</i> - 100 photos
22-24/6	Kyalo Aloys	Dakawa (Tanzania)	- Photos taken of main weeds - Specimens collected for the herbarium	• Mr Thomas Kakema, (Senior Research Officer, Dakawa Agriculture Research Institute)	- Herbarium specimens of <i>Boerhavia erecta</i> , <i>Ludwigia abyssinica</i> , <i>Ludwigia hyssopifolia</i> , <i>Cynodon Dactylon</i> , <i>Portulaca oleracea</i> , <i>Sida acuta</i> , <i>Marsilea crenata</i> - 250 photos
19-23/7	Kyalo Aloys	Dakawa, Morogoro (Tanzania)	- Photos taken of main weeds - Specimens collected for the herbarium	• Mr Thomas Kakema, (Senior Research Officer, DARI) • Mr Sontera Eugene, (Senior Technician, Crop Science, Sokoine University of Agriculture)	- Herbarium specimens of <i>Echinochloa colona</i> , <i>Bidens pilosa</i> , <i>Phyllanthus urinaria</i> , <i>imosia pigra</i> - 80 photos

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2-6/8	Kyalo	Moshi & Arusha (Tanzania)	<ul style="list-style-type: none"> <li>- Photos taken of main weeds</li> <li>- Specimens collected for the herbarium</li> <li>- Discussions with potential project partners</li> </ul>	<ul style="list-style-type: none"> <li>• Mr Pyuza Adam, (Principal, Kilimanjaro Agricultural Training Centre).</li> <li>• Mr Kayombo J. Camisius (Weed Technician, Forest Training Institute, Olmotonyi, Arusha)</li> <li>• Mr William Nodoro, (Tutor, KATC)</li> </ul>	<ul style="list-style-type: none"> <li>- Herbarium specimens of <i>Boerhavia diffusa</i>, <i>Ludwigia adscendens</i>, <i>Alternanthera sessilis</i>, <i>Portulaca oleracea</i>, <i>Schoenoplectus senegalensis</i>, <i>Amaranthus spinosus</i>, <i>Eichhornia crassipes</i></li> <li>- 100 photos</li> </ul>
16-20/8	Rodenburg Kyalo Aloys	Cotonou, Dassa & Lokossa (Benin)	<ul style="list-style-type: none"> <li>- Scanning of specimens in the AfricaRice herbarium in Cotonou</li> <li>- Discussions on project progress with the programme Director, Dr Paul Kiepe and partners in Benin</li> <li>- Tour of rice fields in Dassa and Lokossa</li> <li>- Photos taken of main weeds</li> <li>- Specimens collected for the herbarium</li> </ul>	<ul style="list-style-type: none"> <li>• Dr Paul Kiepe (Leader, Program 2, AfricaRice)</li> <li>• Ms Mariame Mariko, (Research Technician, AfricaRice)</li> </ul>	<ul style="list-style-type: none"> <li>- Herbarium specimens of <i>Passiflora foetida</i>, <i>Ageratum conyzoides</i>, <i>Euphorbia hyssopifolia</i>, <i>Kyllinga erecta</i>, <i>Tridax procumbens</i>, <i>Euphorbia heterophylla</i>, <i>Eclipta alba</i>, <i>Rhamphicarpa fistulosa</i></li> <li>- 500 photos</li> <li>- 109 herbarium specimens scanned</li> </ul>
30/8-02/9	Rodenburg, Kyalo	Doho (Uganda), Nairobi (Kenya)	<ul style="list-style-type: none"> <li>- Discussions on project progress with partners in Uganda and Kenya</li> <li>- Tour of rice fields to train partners in taking photos and collecting specimens</li> </ul>	<ul style="list-style-type: none"> <li>• Dr Michael Hillary Otim (National Crops Resource Research Institute, NaCRRI, NARO, Uganda)</li> <li>• Mr Dakha Fred (Field Officer, Doho Rice</li> </ul>	<ul style="list-style-type: none"> <li>- Herbarium specimens of <i>Ageratum conyzoides</i>, <i>Bidens pilosa</i>, <i>Ludwigia octovalvis</i>, <i>Cyperus difformis</i> L.,</li> </ul>

				Scheme, Uganda) • Ms Hottensiah Wambui Mwangi (KARI, Kenya) • Dr Juma Mohamed Kayeke, (Weed Scientist MARI, Tanzania)	<i>Echinochloa colona</i> and others - 100 photos
16-18/9	Rodenburg	Kisumu, Bunyala (Kenya)	- Discussions on project progress with partners in Uganda and Kenya - Tour of rice fields to train partners in taking photos and collecting specimens	• Ms Hottensiah Wambui Mwangi (KARI, Kenya) • Mr Henry Ngesa (KARI-Kibos, Kenya)	- Partners trained - Photos and samples of more than 10 species
19-24/9	Le Bourgeois	Dar es Salaam (Tanzania)	- Discussions on project progress (administrative, technical, budgetary) - Installation and final configuration of the AFROweeds database - Training on how to use the AFROweeds database - Presentation of the AFROweeds project to Mrs J. Giraud, Scientific Consultant at the French Embassy - Photos of weeds	Dr J. Rodenburg (AfricaRice), Mr G. Kyalo (AfricaRice), Ms K. Aloys (AfricaRice), Ms J. Giraud (French Embassy)	- Administration and scheduling - Partners trained - Database installed and configured - Project presented to the French Embassy - 35 Photos
27-28/9 & 1/10	Rodenburg	Dassa & Cotonou	- Work on the herbarium in Cotonou - Photos taken of main weeds	• Mariame Mariko, (Research Technician,	- Specimens of more than 10 species

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(Benin)	- Specimens collected for the herbarium	AfricaRice) • Charles Djigbenoude, Field (Field Technician, AfricaRice) • Deloris Deh (Student, University of Abomey-Calavi)	- 300 photos
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### **Activity 2e: Organize an Online Review Meeting**

“Virtual” meetings of the AFROweeds team

Cirad's Pierre Grard has been based in Hanoi, Vietnam since January 2010. The AfricaRice team (Jonne rodenburg, Gerald Kyela, Kobusinge Aloys) is located in Dar es Salaam in Tanzania, while Thomas Le Bourgeois, Pascal Marnotte and Nora Bakker are based in Montpellier, France. Work meetings using internet telephony tools are organised regularly to determine project progress made and to schedule activities. These meetings can concern 2 or more people depending on the subject.

In addition, Jonne Rodenburg travelled to Montpellier twice (March and June 2010) in connection with other research projects and Pierre Grard also came to Montpellier in March and September 2010. On each of these occasions work meetings were organized with the members of the AFROweeds project based in Montpellier to discuss administrative and technical aspects.

### **Activity 2g: Scanning the specimens**

Scanning of herbarium specimens with the aim of integrating them in the database so that the photos may be used to describe the species at a later date.

The specimens in Cirad's tropical weed herbarium in Montpellier were inventoried and selected. At this time 126 specimens corresponding to 42 weed species have been digitalized and entered in the database. This work is still on going.

The specimens in Cirad's ALF herbarium in Montpellier were inventoried and selected. They will be scanned at the beginning of the second year.

An exhaustive inventory will be drawn up of the specimens in the University of Abidjan-Cocody's herbarium and they will be scanned during the second year of the project.

The specimens in AfricaRice's 2 herbaria (Cotonou and Dar es Salaam) were scanned and any new specimens are now scanned and entered into the database as soon as they have been collected and prepared.

To date, 128 specimens from AfricaRice's herbaria in Cotonou and Dar es Salaam have been scanned and entered into the database. This activity will be continued throughout the second year of the project.

### **Activity 2h: Botanical description texts**

Botanical description of the species prepared and recorded in the database so that weed data sheets may be drawn up and made accessible via the project's website and used as part of the recognition help tools (software, field guide).

A complete botanical description of 73 species has been prepared and recorded in the database. The identification characters needed to create the composite picture computer-assisted identification tool have been completed for 70 species.

### **Activity 2i: Weed control methods**

Inventory and recording of the weed control methods used in the different countries involved in the project.

African partners are compiling the information they have on weed control methods.

Various aspects are taken into account:

- Control methods against one or a few species (e.g.: *Cyperus* spp., *Ramphicarpa fistulosa*, *Striga aspera*...)

- Control methods against wild rice (*Oryza barthii*, *O. longistaminata*...)
- Control methods against rice weeds (mutant *Oryza sativa* that has become a rice crop weed)
- Rice crop weeding methods with a distinction being made between lowland and irrigated rice production systems.

This information will be integrated into the database in coming years and updated regularly.

### ***Activity 3: Data Integration, implementation of the knowledge base (identification and control measures)***

#### **Activity 3a: Feeding the species description databases**

A complete botanical description of 73 species has been prepared and recorded in the database. The identification characters needed to create the composite picture computer-assisted identification tool have been completed for 70 species. This work will be continued regularly in coming years.

#### **Activity 3b: To realize the different drawings of the composite picture used in the identikit system**

Preparation of the drawings used to construct the composite picture computer-assisted identification system (CAID system). These are vectorial drawings representing the different modalities of the botanical, ecological or geographical characters used.

Forty-one characters were selected during the initial workshop in Cotonou to develop the composite picture computer-assisted weed identification tool (CAID system), i.e.:

- 35 morphological characters represented by 271 modalities
- 5 environmental characters represented by 15 modalities
- 1 geographical character represented by 11 modalities.

Of the 297 modalities corresponding to the 41 selected characters, 271 are drawn and may already be used to construct the composite picture computer-assisted identification system. Drawings of the additional modalities are being prepared and will be finished in the course of the second year.

#### **Activity 3c: Image processing**

Various actions must be undertaken for the images to be processed:

- Collection of plant photos during field trips,
- Selection of existing photos in the collections of various partners
- Scanning of silver-based photos,
- Scanning of herbaria specimens,
- Renaming of the image files using the principle presented at the initial workshop in Cotonou to avoid duplicates and group together all the images of the same species,
- Input and management of image information in the project database.

Table 2 shows the result of this activity.

Table 2: Number of photos selected, collected, prepared and entered into the database

Item		Very good quality	Medium quality	Total
Photos	- AfricaRice collection selection	250	600	850
	- Cirad collection selection			1454
	- AfricaRice collection	1580	1574	3154
	- Cirad collection			89
	- IER Mali collection			30
	- Entry in the AFROweeds database			811
	<b>Percentage of species with at least one photo in the database</b>			

***Activity 4: Dissemination sessions and generate feedback on AFROweeds knowledge base. Launching of the CD and the web-based versions***

**Activity 4a: Dissemination sessions / Communication**

Dissemination of information and knowledge to partners, stakeholders and the general public, communication about the project and actions undertaken to boost project visibility.

An internet link to the Cirad site <http://idao.cirad.fr> was created on the AFROweeds website to disseminate general information on tropical weeds and on the composite picture computer-assisted identification system (CAIO) to AFROweeds project partners and associates.

The website presents the principles of composite picture identification, various multimedia tools already used in Africa, Asia or countries in the Indian Ocean to identify and retrieve information on crop weeds, and provides access to the species description sheets available in the different tools. It is an important documentary resource for partners and associates.

Communication actions and actions undertaken to boost project visibility

Various actions were undertaken during the initial project workshop held in February 2010 in Benin.

- A group photo taken of all the weed scientists involved in the project, and bearing the logos of the European Union and the coordinating institutions, was given to all partners (Annex 6.1)
- Four articles were published in Benin national newspapers (Annex 6.2):
  - o L'AUTRE Quotidien No. 1348 dated Monday 8 February 2010
  - o Le Matin No. 4194 dated 8 February 2010
  - o Fraternité No. 2524 dated 8 February 2010
  - o L'Echiquier No. 106 dated 8 February 2010
- A television report was broadcast on the national news on 5 February 2010.

A written communication and a poster were prepared and will be presented at the 21<sup>st</sup> COLUMA – AFPP conference (International weed control event) in Dijon – France on 8 and 9 December 2010 (Annex 6.3).



A brochure presenting the AFROweeds project (English version) was published and distributed to partners and associates (Annex 6.4). The French version is in preparation.

**2.2. Please list all contracts (works, supplies, services) above 5000€ awarded for the implementation of the action during the reporting period, giving for each contract the amount, the award procedure followed and the name of the contractor**

Two orders placed by Cirad with suppliers amounted to more than €5,000:

- One placed with DELL was for 3 computers amounted to a total of €5,211.87. The price of each individual computer was less than €5,000.
- One order placed with ShopPhoto for the purchase of 3 cameras amounted to a total of €5,993.31. The price of each individual camera was less than €5,000.

One order placed by AfricaRice with the ECONOCOM supplier amounted to a total of €10,921.10. The order involved the purchase of 4 computers and 3 cameras for AfricaRice in Tanzania and the price of each item was less than €5,000.

All the orders were placed following quotes received by Cirad-approved suppliers (ShopPhoto) or by Cirad-preferred suppliers (Dell for computers and Econocom for all overseas purchases).

Cirad-preferred suppliers are suppliers who comply with certain selection criteria (technical performance, quality, negotiated service prices, etc.) and who have a negotiated a minimum sales figure with Cirad.

Cirad-approved suppliers are suppliers who comply with certain selection criteria (technical performance, quality, services, advantageous prices, etc.) but who have not negotiated a minimum sales figure with Cirad.

Pursuant to articles 2.4.1. and 4.2.3 of the Practical Guide for contractual procedures in external actions, Cirad has preferred or approved suppliers that have already been subjected to the competitive bidding process and have been selected by the institution. Furthermore, none of the items ordered cost more than €10,000 €

**2.3. Please provide an updated action plan <sup>2</sup>**

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<sup>2</sup> This plan will cover the financial period between the interim report and the next report.

Year 2 of the AFROweeds project													
Activity	Month 1	Semester 1					Semester 2					Implementing body	
		2	3	4	5	6	7	8	9	10	11		12
1b - Open the Web 2.0 participatory tools													Biodiv. Computer Expert CIRAD + Web manager
2a - Bibliography													CIRAD + AfricaRice + NARS
2b - Consultation of existing herbaria													CIRAD + AfricaRice + NARS
2d - Field trip													CIRAD + AfricaRice
2f - Workshop (Mali)													CIRAD + AfricaRice + NARS
2g - Scanning the specimens													CIRAD + AfricaRice + NARS
2h - Botanical description texts													CIRAD + AfricaRice
2i - Weed control management													CIRAD + AfricaRice + NARS
3a - Feeding the species description databases													CIRAD + AfricaRice
3b - Drawings of the composite picture IDAO													CIRAD
3c - Image processing													CIRAD + AfricaRice + NARS
4a - Dissemination / communication sessions													Mainly AfricaRice: Web 2.0 Mngmt. CIRAD too (Dissemination)

To be included in the scheduling of the project's second year:

- Development of Web 2.0 Participatory tools (activity 1b) that was postponed until year 2.
- Workshop in Senegal (activity 2f) that initially only concerned principal partners (Cirad and AfricaRice) that we plan to open up to African partners and that we would like to organize in one of the partner's countries (for example in Mali)
- Activities spread over years 1 and 2 and whose initiation was postponed will be carried out in year 2 (collection, scanning, descriptions, control methods, etc.)
- The other activities planned for year 2 are unchanged.

### **3. Partners and other Co-operation**

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#### **3.1. How do you assess the relationship between the formal partners of this Action (i.e. those partners which have signed a partnership statement)? Please specify for each partner organisation**

AfricaRice partner:

Working relations are very good, both administratively and technically.

It should be noted that a collaborative research agreement was established at the end of 2009 and signed on 15 January 2010 by AfricaRice and Cirad. It specifically defines the technical contribution made by each partner and the allocated budget.

The presence of Cirad's project administrative assistant, Mrs Bakker, in Cotonou for the initial workshop, was useful in that she explained and clearly defined the administrative operating rules of the European Commission. Comments made by Cirad coordinator on financial or functioning aspects of the project have been taken into account by the AfricaRice partner.

Regular contacts by video conference and meetings (4 in the first year) in Cotonou, Montpellier and Dar es Salaam allowed for regular administrative and technical updates on the state of project progress.

Part of the activities were delayed during the first year given that the project was launched on the day of its signature (16 October 2009), but the first financial advance from the European Commission was only received by the contractor (Cirad) on 30 December 2009 and the funds granted to AfricaRice in the framework of the Cirad /AfricaRice agreement regarding the AFROweeds project were only made available on 31 January 2010.

The absence of a starting phase between contract signature and funds availability that would have allowed the teams to prepare themselves for the various activities, and the time taken to recruit personnel and receive the necessary equipment explain the delay in implementation some activities (field trips, specimen collection, database feeding, bibliographic summaries) during the first year of the project.

The involvement of outside partners in project activities is not always easy to manage. Some privileged partners such as the University of Cocody-Abidjan have contributed hugely to the project. A student writing a thesis on the weeds of rice in Côte d'Ivoire will come and spend 2 months at Cirad in Montpellier, working with P. Marnotte and T. Le Bourgeois. This will be an opportunity to summarize the student's observations and information collected in the AFROweeds database, and to train and familiarize him with tool use, with the long-term aim of the tool being used by the team at the Côte d'Ivoire University.

Other partners interested in the project have difficulty getting involved due to the lack of a specifically allocated budget. It is difficult to make them understand, despite several explanatory attempts, that they are not being requested to perform a particular task requiring specific financing, but rather that the project is an opportunity that provides the technical means for them

to summarize knowledge that they have already acquired during their research projects or that they are in the process of acquiring so that it may be shared and discussed with all the members of the network in the aim of it becoming accessible to all.

The aim of the invitation extended to African weed scientists to participate in the second workshop is to show them how much progress has been made by the contributors and to demonstrate that it would be scientifically and technically beneficial for them to contribute to the project too. Furthermore, to facilitate collaboration and provide added value to the partner's contributions, it has been envisaged to organize the second workshop in a national institution of one of the partners (e.g. the Office du Niger in Mali). Discussions with various partners are currently ongoing pending the opinion regarding a budgetary transfer that would allow such a workshop to be organized.

### **3.2. How would you assess the relationship between your organisation and State authorities in the Action countries? How has this relationship affected the Action?**

During the first year, relations between the AFROweeds project and State Authorities in the various Action Countries were limited to project presentation to the French Embassy in Tanzania. Project computer tools and products (website, databases, species data sheets, identification systems) are not yet sufficiently developed to justify use by decision-makers and State Authorities.

### **3.3. Where applicable, describe your relationship with any other organisations involved in implementing the Action:**

- Associate(s) (if any)
- Sub-contractor(s) (if any)
- Final Beneficiaries and Target groups
- Other third parties involved.

Weed scientists from universities and national research institutions in 11 countries of the concerned region were invited to participate in the initial project workshop that was held in February 2010 in the AfricaRice Centre in Cotonou (Benin).

Name	Institution
Souleymane Diallo	ISRA, Saint-Louis CRA, Sénégal
Israel K. Dzomeku	University For Development Studies, Faculty Of Agriculture Tamale, Ghana
Friday Ekeleme	College of Crop and Soil Sciences, Michael Okpara University of Agriculture, Umudike, Nigeria
Thomas P. Kakema	Dakawa Agriculture Research Institute, Morogoro, Tanzania
Adam Ahanchede	University of Abomey Calavi, Cotonou, Benin
Pascal Adéyèmi	INRAB – SPRR, Bohicon, Benin
Sarra Soungalo	IER, Niono, Mali
Hamidou Traoré	INERA, Ouagadougou, Burkina-Faso
Oueye Boure Gaouna	ITRAD, N'Djamena, Chad
Hottensiah Wambui Mwangi	Kenya Agricultural Research Institute (KARI), National Agricultural Research Laboratories (NARL), Nairobi, Kenya
Joseph Ipou Ipou	Botanical Laboratory, University of Cocody-Abidjan, Côte d'Ivoire
Michael Hillary Otim	National Crops Resource Research Institute, NaCRRI, NARO, Uganda

Moreover, it was proposed that, as privileged partners in the project, they might share the data and knowledge they already possess on weeds of rice in their countries and in exchange they would be able to access all the data in the AFROweeds database. In addition, they also have access to the project's participatory tools and can create a personal database that can interact with the general project database. They give their advice on to what extent the computer tools developed in the framework of the project are operational, and on the products that will be distributed over time, with a view to improving them. Some partners such as Dr Ipou Ipou from the University of Cocody-Abidjan (Côte d'Ivoire) or Mr Soungalo from the IER (Niono, Mali), Mr Adéyémi of the INRAB, or Prof. Ahanchédé from the University of Abomey-Calavi (Benin) have already contributed significantly to the project by providing descriptions, species information, photo and specimen collections and field observations.

### **3.4. Where applicable, outline any links you have developed with other actions**

*If your organisation has received previous EC grants in view of strengthening the same target group, in how far has this Action been able to build upon/complement the previous one(s)? (List all previous relevant EC grants).*

## **4. Visibility**

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How is the visibility of the EU contribution being ensured in the Action?

The various logos of the EU and ACP S&T programme appear on all the information and communications material produced in connection with the project (PowerPoint presentations, posters, brochures, website) (Annex 6).

The various logos of the EU and ACP S&T programme appear on all the technical support material distributed to partners and associates (Annex 5).

The EU and ACP S&T programme are thanked in all communications presented at conferences (e.g. Columa 2010) and in all oral presentations.

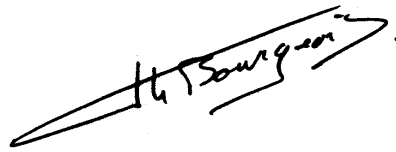
The fact that the project is being financed by the EU was mentioned in radio, television and newspaper interviews during the initial workshop in Cotonou (Benin).

The fact that the project is being financed by the EU and the ACP S&T programme was mentioned during discussions with and when the AFROweeds project was presented to the Scientific Department of the French Embassy in Tanzania.

**The European Commission may wish to publicise the results of Actions. Do you have any objection to this report being published on EuropeAid Co-operation Office website? If so, please state your objections here.**

Name of the contact person for the Action: Dr Thomas Le Bourgeois

Signature:

A handwritten signature in black ink, appearing to read 'Th. Le Bourgeois', enclosed within a hand-drawn rectangular box.

Location: Montpellier, France

Date report due: 16<sup>th</sup> of November 2010

Date report sent: 24th of November 2010