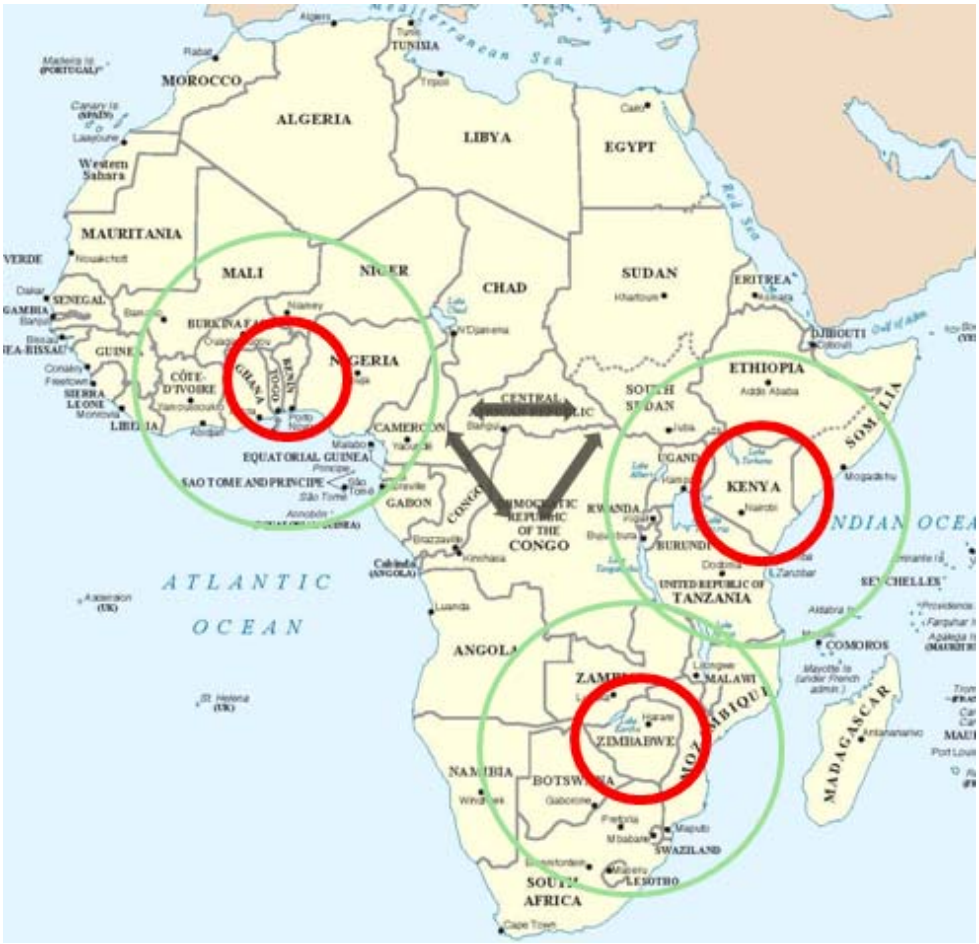
ACP S&T Project Inception workshop

Strengthening capacities and informing policies for developing value chains of neglected and underutilized crops in Africa

12-14 March, 2014 at World Agroforestry Centre, Nairobi, Kenya



Contents

Introduction

The project '**Strengthening capacities and informing policies for developing value chains of neglected and underutilized crops in Africa',** supported by the EU-ACP Science & Technology Programme with co-financing by the project partners[1], runs from 1st January 2014 to 31st December 2016.

The overall objective of the project is 'Enhanced value chains of neglected and underutilized species (NUS) in Africa contributing to improved food and nutritional security, income of smallholder farmers and entrepreneurs and mitigation of, and adaptation to climatic, agronomic and economic risks.'

The project partners, associate organizations[2] and experts met for the project inception workshop on 12-14 March, 2014 at the World Agroforestry Centre, Nairobi, Kenya. This report summarizes the proceedings of the workshop and informs on the decisions made regarding project implementation.

Objectives

The objectives of the 3-day workshop were:

- Build a strong project implementation team and develop a shared understanding of the current situation regarding value chains of the target crops in the project countries/sub-regions
- Review project objectives, outputs and activities and the project logfame, and visualize a 'theory of change' to which the project will contribute
- Identify opportunities for beneficial external alliances
- Validate and update the work plan and budget for Year 1, and the overall plan for Years 2&3
- Plan the project's knowledge sharing, communication and visibility actions
- Review EU-ACP requirements and timetables for financial and activity reporting

Programme

The programme was designed jointly by the project partners at four skype/telephone meetings held between 29 January and 13 February, 2014 (Annex 1). It consisted of two parts:

Part I: Introductions, theory of change and situation analysis, which focused on sharing up-to-date knowledge on the value chains of target crops – Bambara groundnut, and amaranth – and the status of research and development on neglected and underutilized species (NUS) generally in the three focus countries. To this end, a number of experts were invited to Part 1.

Part II: Project planning and administration, which focused on validating the project's logframe and work plan. We also reviewed the project budget in preparations for the Letters of Agreements with project partners.

[1] The project is implemented by a partnership consisting of Bioversity International (Coordinator); African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), Kenya; International Foundation for Science (IFS), Sweden; Laboratory of Agricultural Biodiversity and Tropical Plant Breeding (LAAPT), Benin; University of Nairobi, Kenya, and Africa University, Zimbabwe, and national partners in Benin, Kenya and Zimbabwe

[2] Associates are: ExcelHort Consulting Ltd, Uganda; Global Horticulture Initiative, Germany, and; West and Central African Council for Agricultural Research and Development (CORAF/WECARD), Senegal

Participants

All project partners were present at the Inception workshop. Of the three Associate organizations, ExcelHort Consult LTD, Uganda attended, represented by Dr Andrew Ainomugisha, CEO. Regrets were received from, Dr Sidi Sanyang, CORAF/WECARD and Dr. Detlef Virchow, Global Horticulture Initiative (GlobalHort), respectively.

Additional contributions were generously provided by the following experts:

- Prof. James Kung'u, Kenyatta University and Chair ANAFE Eastern and Central Africa RAFT
- Dr Fekadu Dinssa, AVRDC-The World Vegetable Centre
- Dr Viktor W. Wasike, Horticulture and Industrial Crops Division, Kenya Agricultural Research Institute
- Dr Daniel Sila, Jomo Kenyatta University of Agriculture and Technology (JKUAT)

The list of participants is found in Annex 2.

Part I: Introductions, theory of change and situation analysis

Opening session

Brief welcome remarks were given by representatives of the various organizations involved in the previous EU-ACP project and in formulating the proposal for the present one.

Value chains: basic issues and definitions

Matthias Jäger, Bioversity International, Columbia

Following the introductions of participants, we moved quickly to the subject matter of the Inception Workshop via a presentation on '**value chains: basic issues and definitions'**, by Matthias Jäger, Value Chain Specialist at Bioversity International, Colombia.

Drawing on experiences from applying the 'Value Link' methodology[3] in Latin America, he introduced **Definitions, methods and concepts** for analyzing and upgrading value chains. He emphasized that 'The value chain is placed in an infrastructural, institutional, socio-economic and policy environment. The "value" largely focuses on the economic value that is added to the product at each stage in the chain'**.**

[3] GIZ. Value links manual. The methodology of value chain promotion. First edition. Accessed March 2014 at http://www2.gtz.de/wbf/4tDx9kw63gma/ValueLinks_Manual.pdf

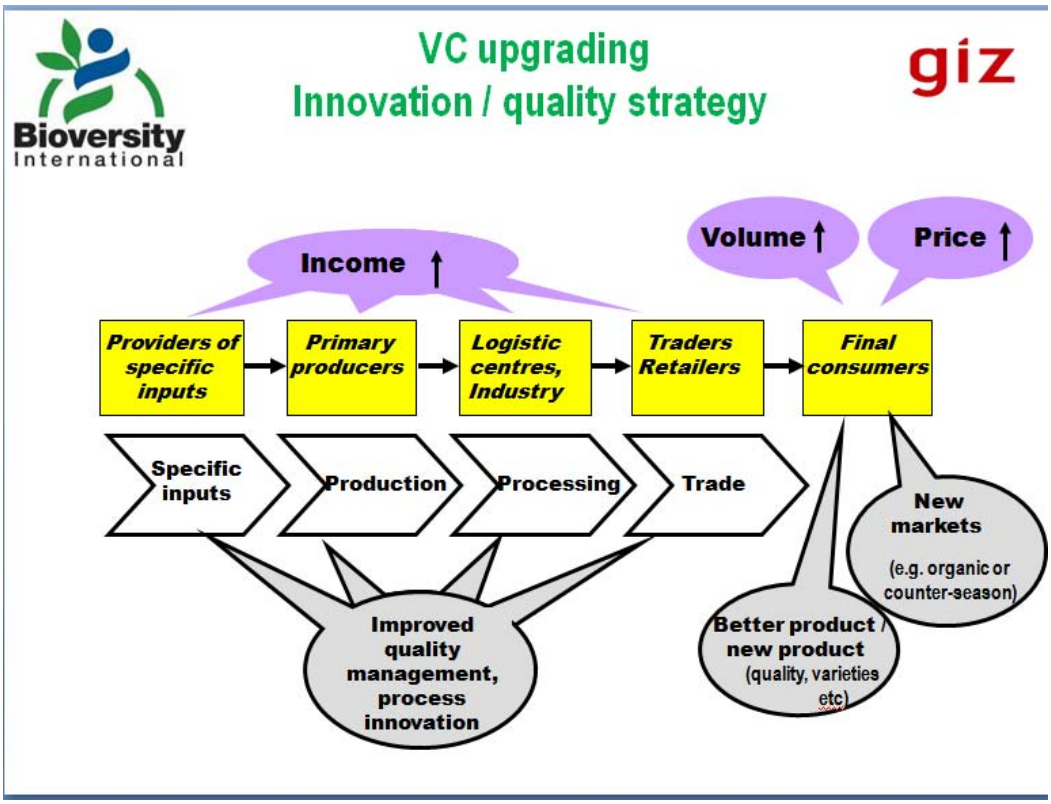


Figure 1. Approaches to value chain upgrading (Source. M. Jäger)

The second part of his presentations explained '**How to arrive at a value chain project?**, covering areas such as rapid market appraisal, value chain research and market research. He also clarified the difference between supply chain and value chain: 'When this relationship becomes a strategic collaboration between various participating organizations in order to achieve certain objectives in the market over the long term and for the mutual benefit of the participants, is known as a value chain (system approach).'

A successful value chain development project could then result in an upgrading strategy in which participants have a shared interest (Figure 1).

Overview of the project's design, expected results and outputs

Per Rudebjer, Bioversity International, Bioversity International, Italy

An orientation on the project and its design was given by Per Rudebjer, Bioversity International. Lessons learned from an earlier EU-ACP project, *'Building human and institutional capacity for enhancing the conservation and use of neglected and underutilized species of crops in West Africa, Eastern and Southern Africa'* played an important role in conceptualizing the current project. Justifications emerging from that project guided its design:

- Researchable problems related to NUS crops' cultivation, processing or marketing constraining their potential
- A replicable model for value chain upgrading exists, but needs to be 'scaled up'
- Confirmed high demand for capacity enhancing activities related to value chain development of NUS, and a documented success of value chain training conducted in the previous project
- Need to go beyond individual capacity to also strengthen the institutional level, to provide a good enabling environment for value chain upgrading.

The project's key elements were introduced:

- **Two crops**: Bambara groundnut and amaranth
- **Three countries**: Benin, Kenya, Zimbabwe, also acting as sub-regional knowledge sharing hubs (Figure 2)
- **Four results**:

  1. **National action plans for value chain upgrading** of Bambara groundnut and amaranth in Benin, Kenya and Zimbabwe prepared, and best practices and lessons validated with national and regional policy actors

  2. Strategies and tools for integrating NUS into higher agricultural education curricula agreed with universities and technical colleges and shared through African educational networks

  3. Enhanced capacity in three African sub-regions to conceptualize and design inter-disciplinary research projects on NUS value chains, and to effectively communicate results to relevant stakeholders

  4. Strategies, tools and methods for strengthening NUS research, education and policy communicated to stakeholders

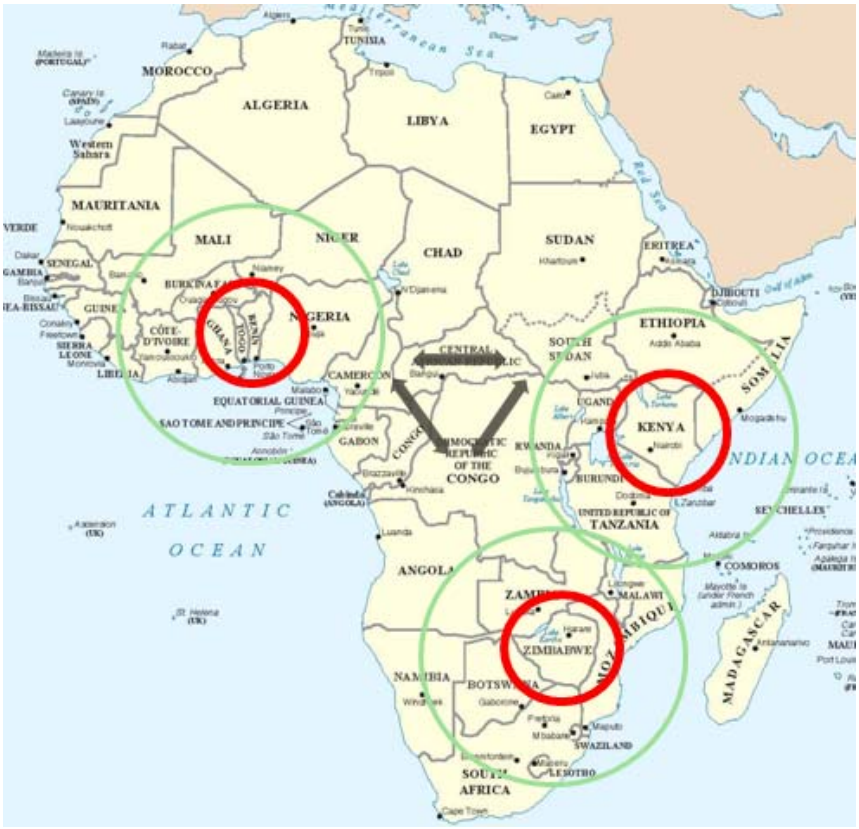


Figure 2. Geographic focus of the project

Situation analysis Bambara groundnut and amaranth value chains

In three presentations, external experts shared the 'state of the art' regarding genetic resources, conservation, use, market potential, functioning innovation platforms, gaps and bottlenecks of the two target crops, and gave an update on on-going work on them.

Bambara groundnut,

Dr Viktor W. Wasike, Kenya Agriculture Research Institute, Kenya

In a comprehensive presentation on Bambara groundnut in Kenya, Dr Wasike informed that:

- 42 Bambara groundnut accessions have been collected in Kenya. Germination tests have been done at KARI laboratory and seed multiplication is on-going
- Studies are underway regarding molecular and morphological characterization, nutritional profiling and assessment of medicinal value

Among the constraints it was noted that:

- No improved agronomic work has been undertaken
- Varieties grown are impure and seed is mixed
- Pests and diseases limit production and quality of produce
- No value addition is made, Bambara being mostly sold as nuts in local markets

Way forward: Dr Wasike concluded by highlighting the needs for action:

- Develop improved varieties (tolerant to pests and diseases) and avail these to farmers for improved production
- Train farmers on improved Bambara groundnut production technology (spacing, plant population)
- Train farmers on diversity of Bambara groundnut utilization technology (recipes) to create markets and spur production
- Train farmers on value addition

Amaranth

Dr Daniel Sila, Jomo Kenyatta University of Agricultural Technology, Kenya

Dr Sila's presentation, entitled 'Situation Analysis of Grain and Leaf Amaranth Value Chains in Kenya and Tanzania' drew on the experience of an international research project he is coordinating.

Why amaranth? The justifications for working on this crop are many: both leaves and grain are edible; it is high in protein content (30% more than the common cereals), it contains essential fatty acids and micro-nutrients (vitamins and minerals). From an agronomic point of view, amaranth is highly tolerant of arid environments, produces

high biomass in a short period of time (grain yield of up to 5,000 kg/ha has been reported) and the grain can be blended with common staples (cereals).

Being a highly variable plant, the project has characterized and evaluated varieties, and selected six leaf types, three grain types and two dual types for further research. The project has also identified a number of needs and opportunities:

- Need to increase shelf life
- New product development: noodles, bread
- Low cost processing technologies
- Establishing linkages in entire value chain
- Strengthening the networks of actors, facilitators and supporting organizations

The gaps and bottlenecks in the grain amaranth value chain, illustrated in Figure 3, are now being addressed as the project continues.

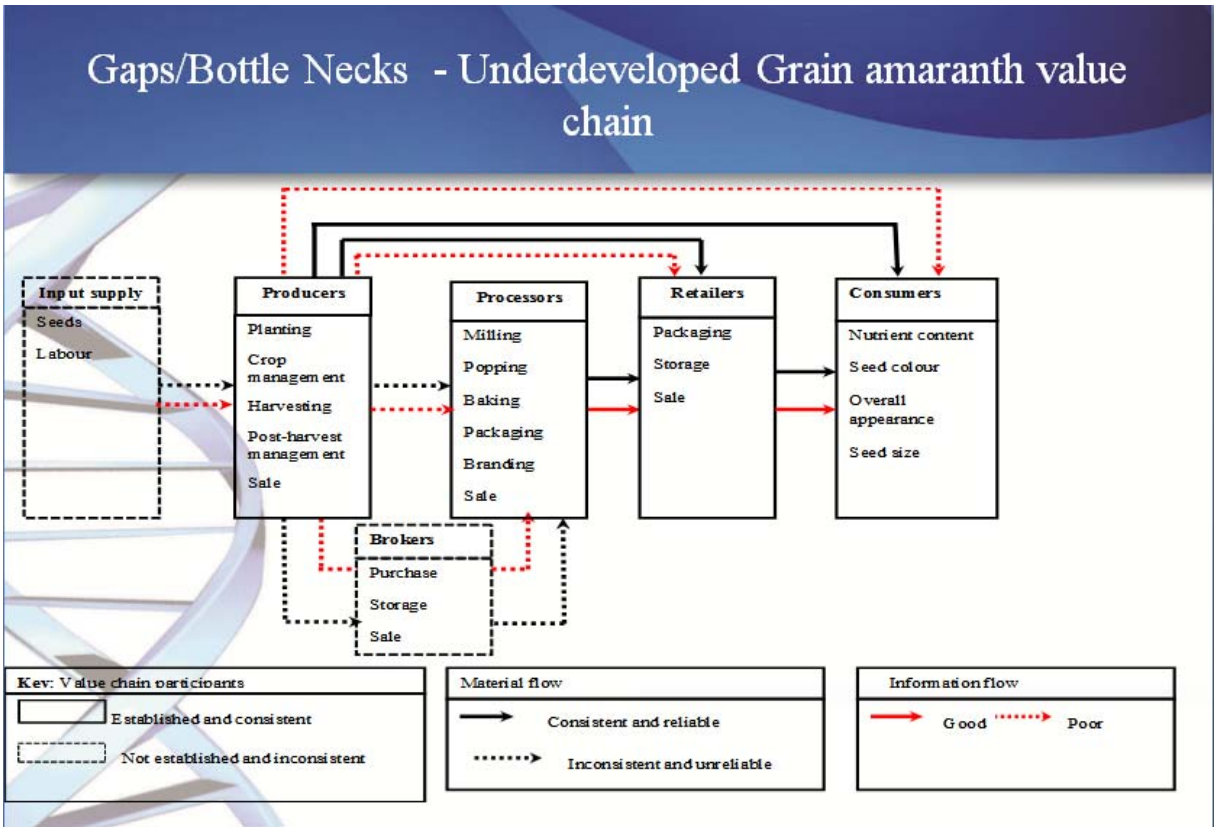


Figure 3. Analysis of the amaranth value chain.

Traditional Vegetables Value Chain

Dr Fekadu Dinssa, AVRDC – The World Vegetable Centre, Tanzania

Looking at traditional vegetables more broadly, Dr Fekadu Dinssa, AVRDC – The World Vegetable Centre, shared experience from value chain work in sub-Saharan Africa. He emphasized that for traditional vegetables with weak or non-existent breeding programmes, like amaranth, it is of critical importance to work with farmers in the selection of varieties. In one example, in Tanzania, the farmers established the following criteria:

- Fast growing
- Resistance to diseases and insect pest
- Ability to produce more tillers

- Dark green colour
- Less watery taste

'Technologies generated through participatory approach reach adoption ceiling faster than those developed through conventional approach', Dr Dinssa pointed out.

Field days and seed fairs are two participatory technologies used to raise awareness of the importance of traditional vegetables for nutrition, income and food security. These are mechanisms for discussing improved technology, seeds, and cultivation practices with and among farmers.

Underutilized traditional vegetables grown on a small scale tend to have complex seed systems (Figure 4). The informal seed sector, involving seed saved by individual and groups of farmers, play important roles for such crops. Capacitating farmers' seed system is important.

Dr Dinssa summarized the challenges in the production and marketing of traditional vegetables as follows:

- Availability of seeds of the right varieties at the right time, place and quality
- Technology dissemination needs to be improved
- Market information and support system not developed
- Bargaining power is very low
- Post-harvest loss
- Less emphasis on such crops by the National Agriculture Research and Extension System (NARES); resource for the sector is limited
- Support from policy makers is lower than for major crops

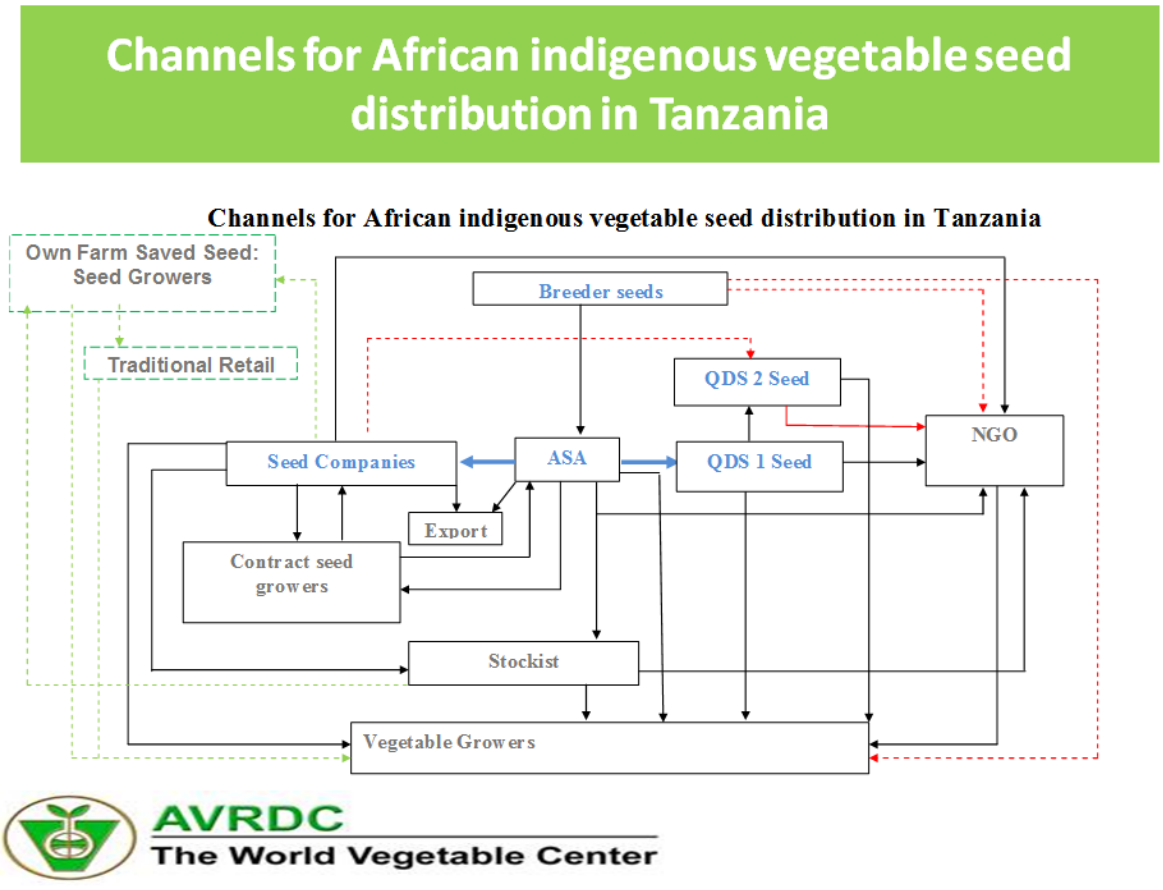


Figure 4. Example of the complex seed systems for traditional vegetables.

Situation analysis: NUS conservation and use in target countries

The three national partners, in Benin, Kenya and Zimbabwe presented an update on the situation with regard to research and development of NUS in their respective countries.

Benin

Dr Alexandre Dansi, Laboratory of Agricultural Biodiversity and Tropical Plant Breeding (LAAPT), Benin

Dr Dansi presented the status of NUS in Benin, and described activities that have been taking place in the country in the last couple of years. This included a national inventory in 2010 that found that many NUS are produced and consumed, some of which are among the most important food crops in the country, including sweet Potato, Bambara groundnut, Kersting's groundnut, and vegetables such as amaranth, moringa, *Crassocephalum, Launea*, etc.

The status of research and development in Benin was described as follows:

- No national program devoted to NUS genetic resources exists
- Small collections of some NUS are available
- Ethnobotanical data exist and some characterization work has been done using morphological markers
- A lot of research on tree species has been done, including research on ethnobotany , natural population structures, biodiversity conservation, etc.
- Agronomic trials on a few species have been conducted, including on leafy vegetables and Kersting's groundnut.
- *In situ* conservation has been widely studied for fruit trees and species of economic importance
- Seeds systems and seed suppliers are not well organized

A national network on NUS is emerging in Benin and a national workshop was convened in early 2014 with 65 participants in attendance, representing all universities and research institutions. The meeting outlined a number of priority actions for NUS R&D in Benin:

- Assess the status of NUS research and development in Benin
- Identify priority species for value chain development
- Reflect on the introduction of NUS in the curricula of secondary (both classical and technical) schools
- Publish online a book of abstracts and a great number of research results on NUS that could excite and guide young scientists, students, professors and directors of laboratories in focusing their research activities on NUS
- Develop strategic action plans for the value chain of these species

Kenya

Dr Kiarie Njoroge, University of Nairobi, Kenya

Dr Njoroge described a national study conducted in 2010, where priority species among Kenya's many NUS were identified within six groups of plants (fruits, roots, leafy vegetables, cereals, legumes and pulses, and undomesticated plants). The study identified some common constraints and bottlenecks in the use of NUS:

- Lack of information/documentation
- Priority setting required
- Promotion, marketing e.g. in supermarkets

- Collating and organizing traditional knowledge kept as a valuable heritage by the communities
- Urbanization and concomitant ecological degradation
- Lack of interest/awareness by youth

A list of research needs and opportunities was also identified, including, for example:

- Priority setting.
- Seed quality issues
- Breeding/agronomic attention to e.g. yield and taste.
- Technology to support commercial exploitation
- Explore the rich micro-nutrient content found in NUS
- Branding, intellectual property rights
- ICT in NUS e.g. information on marketing, production, processing etc.

Zimbabwe

Dr Alberto Chiteka, Africa University, Zimbabwe

Dr Chiteka's presentation covered Bambara groundnut (*Voandzeia subterraneana* L.) and grain amaranth (*Amaranthus hypochondriacus* L.) both having a potential value in contributing to food and nutrition security in Zimbabwe. He examined the status of germplasm collection and evaluation, and reviewed research conducted on these crops with respect to production and value chains. The potential value of these crops to rural livelihoods was discussed as well.

The national gene bank in Zimbabwe has 400 accessions of Bambara nut preserved, but there are limited accessions of Grain Amaranth. The Bambara nut is commonly grown, mostly by smallholder farmers, on a total area of more than 3000ha. Yields are notably low 300 to 600kg/ha and it is mostly sold in the informal grains markets. The crop is cited as a drought-resistant legume crop whose potential has not been fully exploited. Few formal marketing channels have been developed and production of the crop has declined over the past 30 years. Although there are many nutritious palatable products that have been developed from the crop, there is limited exploitation of these products for food and nutrition provision.

The Grain Amaranth is more widely known as a weed with some use of the crop as a traditional leaf vegetable. The potential of grain amaranth has been evaluated and established but utilization of the crop is on a limited scale. It is a short-duration crop, maturing in 65 to 80 days. More than one crop can be produced in a season. There is wide scope for increasing production of the crop and value chain development for increased production marketing and utilization of the crop.

Priority research and development areas for the two crops were identified as:

- Development of seed systems
- Development of effective technology to promote the value chain
- Determination of the market of these crops
- Promotion and exposure of farmers and the public to the two crops and
- Development of effective institutional arrangements for production and utilization of Bambara groundnut and grain amaranth.

Value chain upgrading: experience and needs

Overview of methods and tools for upgrading value chains: multi-stakeholder innovation platforms

Matthias Jäger, Bioversity International, Colombia

Following up on his talk on Day 1, Matthias Jäger continued presenting approaches to value chain upgrading, illustrated by experiences of Bioversity's work on Andean grains (quinoa and amaranth), and Capsicum (chili peppers) in Latin America (Figure 5).

The presentation demonstrated the importance of an integrated approach to address constraints identified using a multi-stakeholder platform. Upgrading strategies could involve, for example, sensory evaluation to identify promising varieties, better technologies to reduce loss and improve health and safety standards, product development and marketing of new products, market intelligence and promotion at international trade fairs.

Summing up, he pointed out that two complementary actions are needed:

- The first concerns what the value chain actors must do to become more competitive and to generate greater value added. We call this the ***value chain upgrading strategy***
- The second dimension concerns the role of facilitators, i.e. government and development agencies running chain development projects and providing assistance. We call this facilitation of value chain upgrading or ***"value chain promotion"***

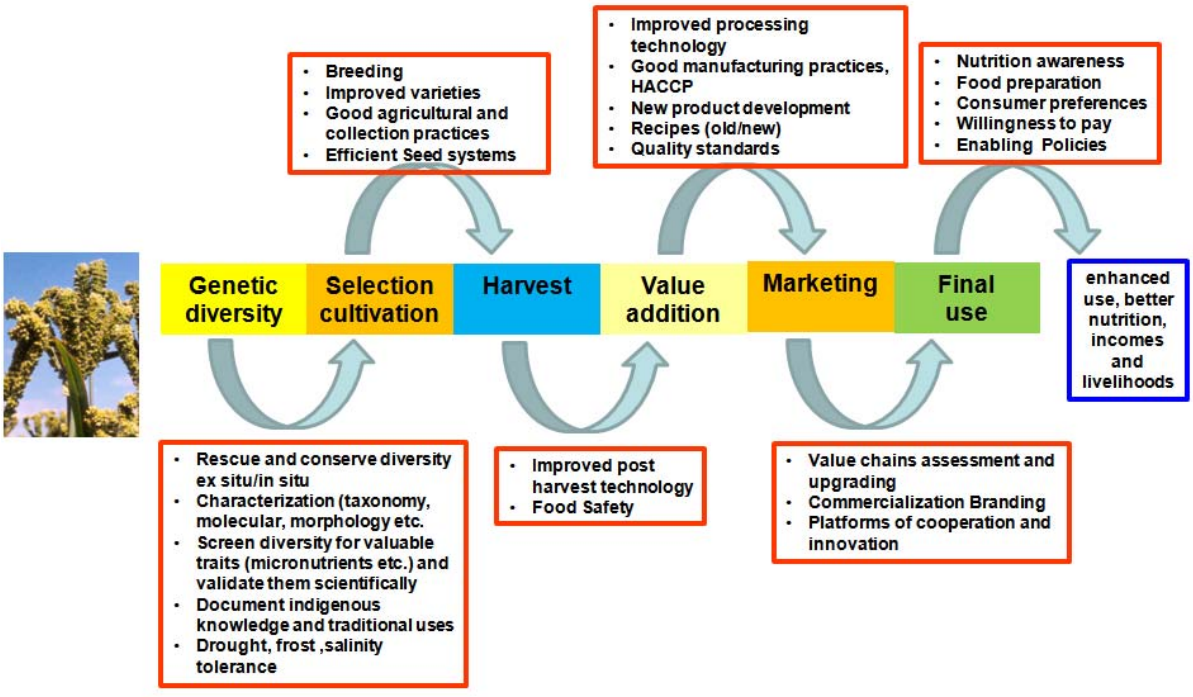


Figure 5. Biodiversity-friendly integrated value chain upgrading approach

Experience of value chain development in Eastern African

Dr Andrew Ainomugisha, ExcelHort Consul, Uganda

ExcelHort Consult is a private sector enterprise which has significant experience on developing value chains, such as on banana in Uganda. The CEO, Dr Ainomugisha shared the company's experience from its Banana Innovation Platform, which has brought together stakeholders including universities and research centres to work with communities in addressing constraints in the banana value chain.

This has resulted in a range of new products, such as: banana juice, biscuits and pancakes and a range of banana fibre products. Improved packaging such as vacuum-sealed fresh matoke can extend shelf life and open up export markets. Animal feed and charcoal briquettes are yet other products that help to add value to Uganda's most important crop.

To facilitate such change, Dr Ainomugisha emphasized the need for a paradigm shift from agriculture to agribusiness, and the need for bridging the gap between universities and the private sector. ExcelHort has successfully facilitated this process through a University Private Sector Forum (Figure 6), where students, innovators and entrepreneurs have a chance to learn together.

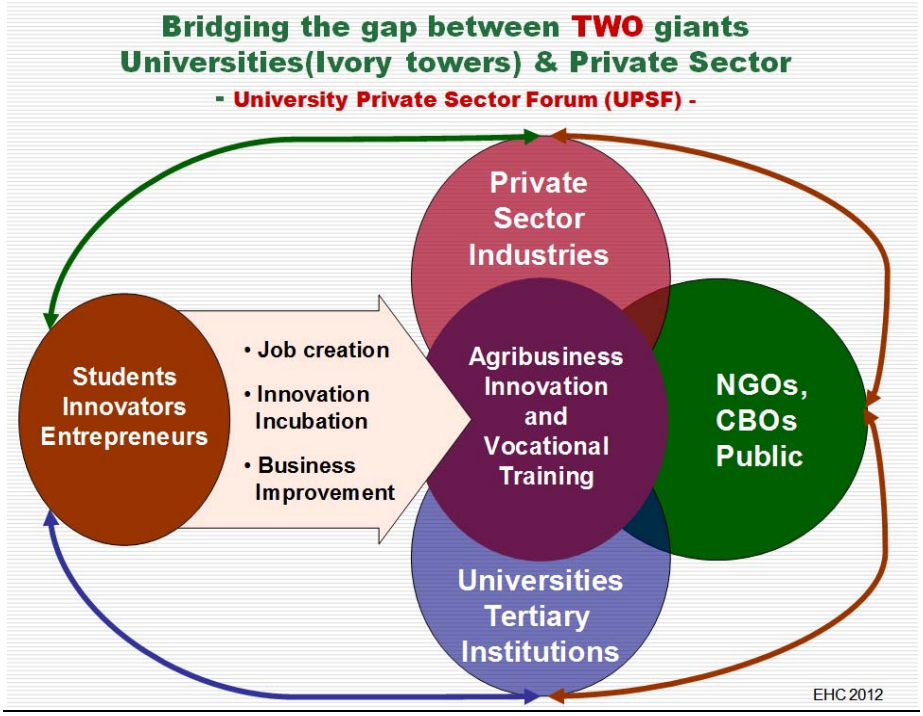


Figure 6. University Private Sector Forum: a model for collaboration

Nutrition-sensitive value chains

Dr Gudrun Keding, Bioversity International, Kenya

A nutrition specialist, based at Bioversity's Regional Office in Kenya, Dr Keding introduced the workshop participants to the concept of nutrition-sensitive value chains. She listed ten recommendations for improving nutrition through agriculture:

1. Incorporate explicit nutrition objectives and indicators into their design, and track and mitigate potential harm

2. Assess the context at the local level, to design appropriate activities to address the types and causes of malnutrition
3. Target the vulnerable and improve equity
4. Collaborate and coordinate with other sectors (health, environment, social protection, labour, water and sanitation, education, energy)
5. Maintain or improve the natural resource base (water, soil, air, climate, biodiversity)
6. Empower women
7. Facilitate production diversification, and increase production of nutrient-dense crops and small-scale livestock (e.g., underutilized crops, …)
8. Improve processing, storage and preservation to retain nutritional value, shelf-life, and food safety, to reduce seasonality of food insecurity and post-harvest losses, and to make healthy foods convenient to prepare
9. Expand markets and market access for vulnerable groups, particularly for marketing nutritious foods
10. Incorporate nutrition promotion and education around food and sustainable food systems that build on existing local knowledge, attitudes and practices

Several entry points towards achieving this were suggested:

- Appropriate agriculture production methods/systems (e.g. agroforestry systems; organic agriculture) to reduce irrigation demand, prevent soil erosion, and avoid elution of nutrients, fertilizers and pesticides into surface and groundwater systems
- New infrastructure and technology to minimize waste and conserve nutrients
- Promote behaviour change in the consumer
- Better education on links between diet and nutrition

Dr Keding concluded by saying that nutrition-sensitive value chains integrate not only different disciplines (agriculture, nutrition, health, environment etc.) in research, but also all stakeholders along and around the food value chain.

Regional perspectives on capacity for value chain development

Prof James Kung'u, Kenyatta University and Chair, ANAFE ECA-RAFT, Kenya

The African Network for Agriculture, Agroforestry & Natural Resource Education (ANAFE) was launched in 1993. In 2003, ANAFE's mandate was expanded to encompass reforming education and training programmes in agriculture, including forestry, agroforestry, and natural resources to make it more responsive to development needs. It registered as an International Network 2007. Currently the network is made up of 134 agricultural colleges and universities in 35 African countries. Of those institutions, 35 are members of ANAFE's Eastern and Central Africa Regional Agricultural Forum for Training (ECA-RAFT), covering Burundi, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, Sudan, South Sudan and Uganda.

Strategic Objectives of ANAFE and the ECA-RAFT are:

1. Review and reform curricula;
2. Improve context relevance through content development and enhanced delivery;
3. Improve institutional governance and leadership;
4. Create an enabling policy and institutional environment through networking.

In the second part of his presentation, Prof. Kung'u shared his views on how ANAFE and the ECA-RAFT could contribute to transforming NUS research, development and education, focusing on tracer studies, curriculum review, and curriculum development (Figure 7).

In conclusion, Prof Kung'u demonstrated the wide range of services that ANAFE could offer to the current NUS project, including capacity development, database of NUS expertise and students, networking and scaling up, and advocacy (Figures 8).

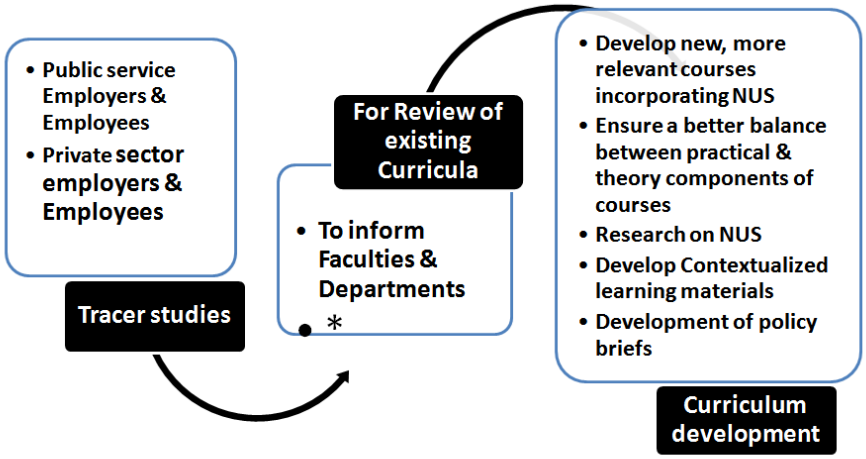


Figure 7. Priority areas for ANAFE in transforming NUS.

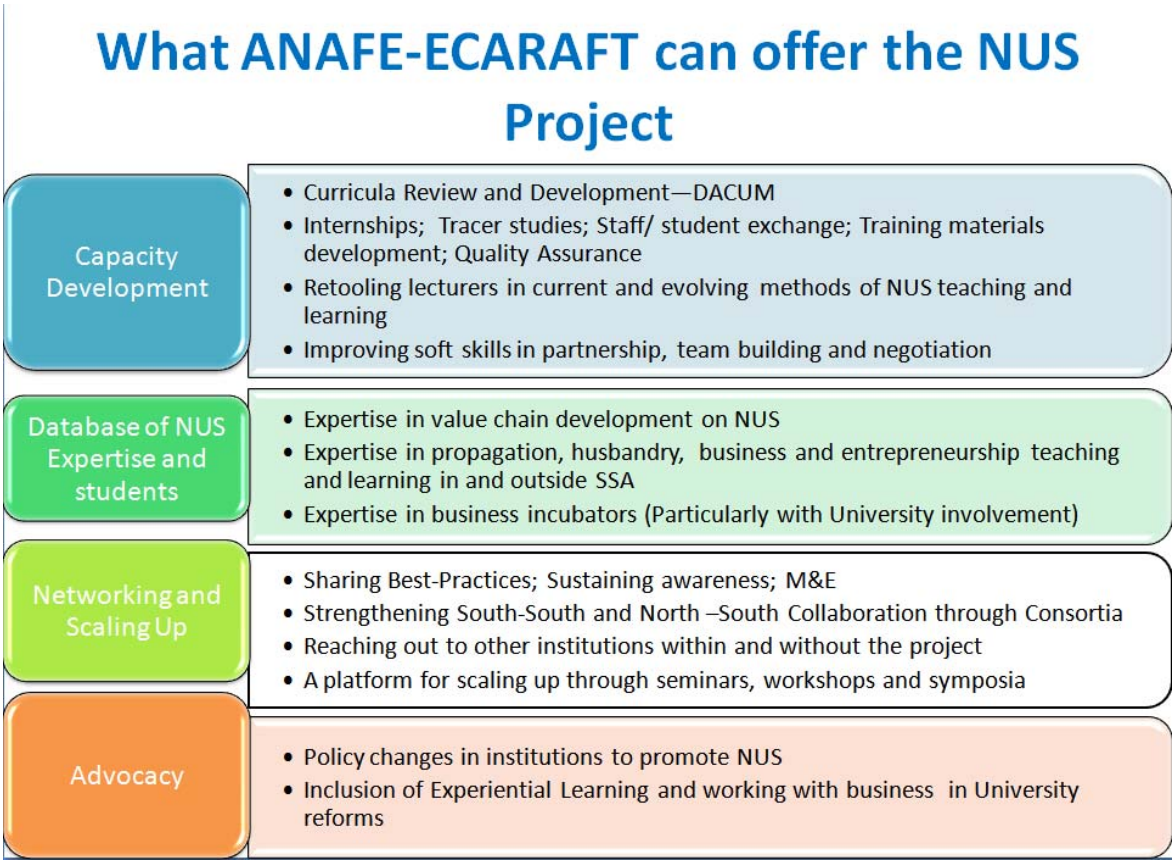


Figure 8. The role of ANAFE in the project

Validating the project's logframe

Dr Richard Hall, International Foundation for Science (IFS), Stockholm

To establish a shared understanding of what the project is expected to achieve within its 3-year period, Dr Richard Hall led a session on validating the project's logical framework, or logframe, for short. He pointed out that a logframe is a management and project planning tool that:

- Places priority on achieving results
- Clearly links planned activities to expected results
- Shifts focus from only activities and outputs (results) to outcomes
- Sharpens thinking, programming and planning of relevant and focused project activities. Is useful for Results-based management

To this end, the participants split in two groups to analyse the project's logframe, each working on two expected results. The guiding questions for the groups were:

- Will activities achieve our desired outputs (results)?
- Are there any desirable outputs/results which are not there?
- Are there any desirable activities which are not there?
- Are there any suggestions from your group as to how any of the activities/outputs/results can provide a more effective springboard to bring about 'behaviour change' (specific objectives/outcomes)?

These questions triggered fruitful discussion and helped participants examine the logframe deeply. While the logframe was found to be sound, overall, a few minor adjustments were made:

Result 1:

- Added: Activity 1.6 Develop policy briefs to inform national and sub-regional strategies on NUS crops (The activity appears in the project document but was missing in the logfame)

Result 2:

- There was a strong sense that this result could be more ambitious. The actual curriculum review to integrate NUS into higher agricultural education curricula could start during the project period in a limited number of institutions. Several ways of achieving this were proposed, including: survey of current situation and agrobiodiversity curricula to establish a baseline; raise the issues of NUS education in relevant policy fora (e.g. African Union); work with the Deans of Agriculture forum; supervise enterprise projects with students; organize one-day national workshops with universities (the latter finally being added as a new activity.

Result 3:

- Corrected: Activity 3.1 The logframe has not been updated to reflect the final budget revision, which includes resources for 3 courses, instead of 6.

The revisions were made to the Logframe (Annex 3).

We also found that some activity numbers in the project document were incorrect, not matching the numbers in the logframe. These were corrected (Table 1).

Table 1. Errata, Project Document

Page	Stated	Corrected	Comment
18, last section	Activity 2.1	**Activity 1.5**	
19, first section	Activity 2.2	**Activity 1.6**	
19, second section	Activity 2.3	**Activity 2.1**	
19, last section	Activity 2.4	**Activity 2.2**	
20, first section	Activity 2.5	**Activity 2.3**	
20, Activity 3.1	Six training courses	**Three** training courses	Budget justification includes the correct number of courses, namely three.

Mapping out key stakeholders at national and regional levels

Dr Sebastian Chakeredza, ANAFE, Kenya, and Matthias Jäger, Bioversity International, Columbia

As emphasized elsewhere in this report, the key to success in developing and facilitating the implementation of National Action Plans for value chain upgrading of target crops is to work with the right stakeholders and build good alliances.

In this session, the participants worked in groups, by country, to do preliminary mapping of key actors, projects and initiatives at national and regional levels. The lists, which will be completed after the workshop, will guide invitations to future national, sub-regional and regional events. The stakeholder analysis will also be helpful in clarifying the role of these organizations and initiatives with regard to future dissemination of project results.

At the regional level, the project can use the FARA network to identify stakeholders to work with.

Part II: Project planning and administration

The Project's 3-year plan of work

The second part of the Inception focused largely on validating and revising the project's work plan, using cards and large brown paper (Figure 9). This resulted in a number of adjustments and also new ideas for activities that would add value to the project. These are described in the following, with Action items noted.

Importantly, a long discussion was held regarding the preparation of National Action Plans (NAP) for value chain upgrading of target crops. Matthias Jäger suggested that a fully fledged process of developing and implementing a NAP would require three stakeholder meetings over a period of about 18 months:

The 1st meeting would focus on:

- Mapping out relevant value chain operators, service providers, research institutes and governmental organizations at micro, meso and macro level and their respective (current) role within the value chain
- Development of a functional value chain map analyzing basic sequences and functions of each value chain actor
- Participatory assessment of bottlenecks and constraints along the different stages of the chain starting from seed systems, field cultivation, post-harvest, processing, commercialization up to final consumption.

- Building of trust and awareness among stakeholders and creating an enabling environment for joint collaboration

The 2nd meeting would focus on:

- Economic analysis of the value added at each stage of the value chain and analysis of the governance structure
- SWOT analysis of jointly identified market opportunities
- Development of a joint vision for upgrading
- Participatory elaboration of upgrading strategies for each stage of the value chain based on the assessment of constraints and bottlenecks

The 3rd stakeholder meeting would focus on:

- Prioritization of the most promising market opportunities and commercial innovations as well as required business models to link farmers and private sector companies to markets
- Elaboration of a detailed national action plan based on upgrading strategies, including activities, responsible actors, timeline and budget

Ideally, the project would have resources to facilitate this entire process. However, due to limitations regarding activities eligible under the EU-ACP project, this is not the case. This means that the three National Action Plans will largely need to be based on Step 1. They will focus on mapping out current value chains, assessing bottlenecks and constraints along the different stages of the chain, and on creating an enabling environment for future collaboration. The further elaboration of the NAPs would need supplementary funding.

Given this limitation, the partners agreed on the following strategies:

- Organize one multi-stakeholder platform in each country in Year 1.
- Be very strategic with regard to partners to invite and alliances to build, including possible like-minded organizations that may be interested in funding steps 2 and 3
- Explore opportunities for submitting concept notes/proposals to other donors, based on results of Step 1.

The detailed work plan was then prepared (Table 2).

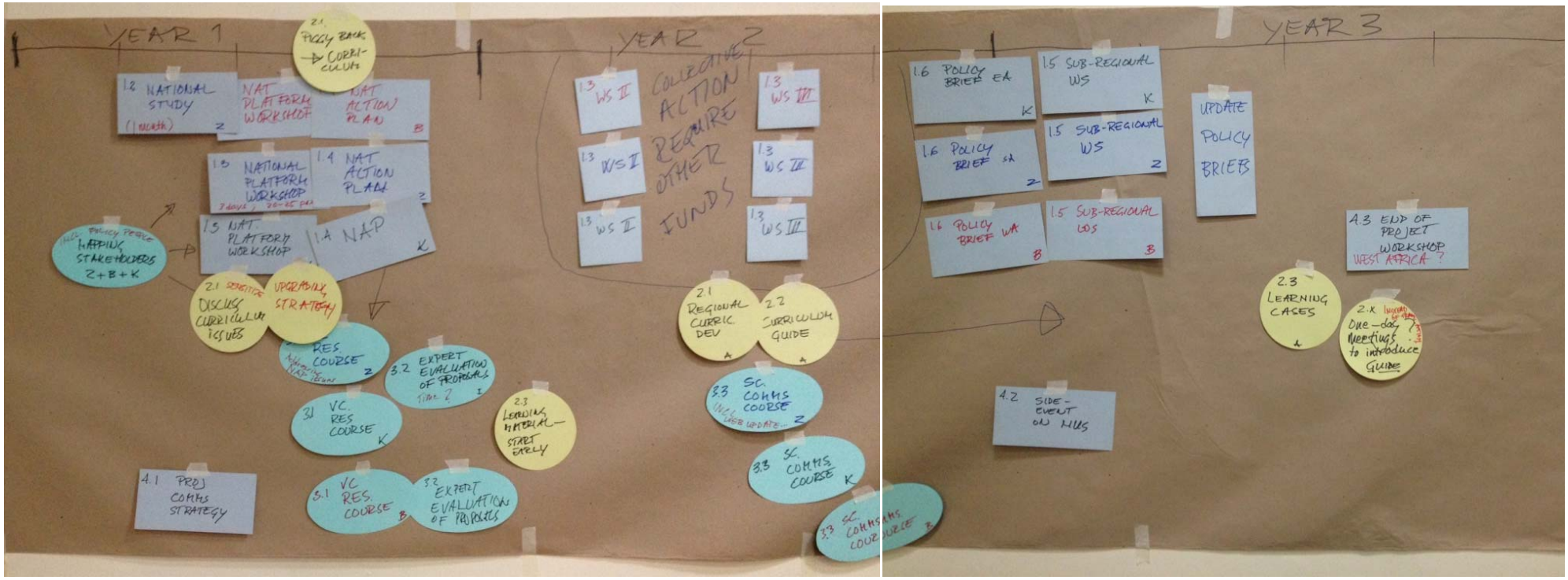


Figure 9. Revised project three-year work plan 2014-2016

Table 2. EU-ACP NUS Value chain project Work Plan (Revised at Inception workshop 13-15 March, 2014)

Activity	Year 1 1	2	3	4	5	6	7	8	9	10	11	12	Implementing body	Comments
Activity 1.2 National study, Zimbabwe													AU	Conducted in Zimbabwe only
Activity 1.3. National innovation platform workshops - stakeholder mapping													AU, LAAPT, UON	Finalize mapping that started at Inception workshop
Activity 1.3. National innovation platform workshops - execution													AU, LAAPT, UON, Bioversity IFS, ANAFE	Dates to be confirmed
Activity 1.4 Writing 3 national Action Plans on Bambara and amaranth value chains													Africa University; LAAPT, University of Nairobi;	Will focus on upgrading strategies (output of 1st stakeholder meeting) To be used by partners and stakeholders for additional resource mobilization
Activity 3.1 Sub-regional NUS project proposal writing training													AU, LAAPT, UON, Bioversity, IFS, ANAFE	All three courses to be implemented in Year 1 (Benin course moved from Year 2 to Year 1) Dates to be confirmed
Activity 3.2 Expert evaluation of proposals for granting programmes													IFS + all partners	Partners may mentor scientists' proposal development
Activity 4.1 Develop and implement a project communication strategy - preparation													Bioversity, ANAFE, IFS + national partners + Associates	
Activity 4.1 Develop and implement a project communication strategy													Bioversity, ANAFE, IFS + national partners + Associates	
Submission of interim financial and narrative report to Bioversity												15	All partners	Year 1 reports to be submitted to Bioversity by 15 December

Activity	Year 2 1	2	3	4	5	6	7	8	9	10	11	12	Implementing body	Comments
Submission of report, and plan of work for Year 2 to EU-ACP		28											Bioversity	
Activity 1.4 Writing 3 national Action Plans on bambara and amaranth value chains - follow up													AU, LAAPT, UON, Bioversity IFS, ANAFE	Collective action and resources mobilization with a view to facilitate the further activities to follow up the NAPs
Activity 1.6 Develop policy briefs													AU, LAAPT, UON + int. partners	Draft briefs to be developed in Year 2 (three briefs on different topics)
Activity 2.1 Regional NUS curriculum workshop													ANAFE + all partners	Dates to be confirmed 2nd Project partner meeting to be held back to back with curriculum workshop
Activity 2.2 Develop curriculum guidelines - draft													ANAFE + all partners	Draft produced in Year 2
Activity 2.3 Develop NUS learning cases - drafts													ANAFE + all partners	Draft produced in Year 2
Activity 3.2 Expert evaluation of proposals for granting programmes													IFS + all partners	Partners may mentor scientists' proposal development
Activity 3.3 Organize 3 sub-regional courses on scientific communication													AU, LAAPT, UON, Bioversity IFS, ANAFE	All three courses to be implemented in Year 2 Dates to be confirmed
Activity 4.1 Develop and implement a project communication strategy													Bioversity, ANAFE, IFS + national partners + Associates	
Submission of interim financial and narrative report												15	All partners	Year 2 reports to be submitted to Bioversity by 15 December
EU-ACP Stakeholder conference														Date to be announced

Activity	Year 3 1	2	3	4	5	6	7	8	9	10	11	12	Implementing body	Comments
Submission of report, and plan of work for Year 3 to EU-ACP		28											Bioversity	
Activity 1.5 Organize sub-regional multi-stakeholder workshops													AU, LAAPT, UON + int. partners	Date to be decided
Activity 1.6 Develop policy briefs													AU, LAAPT, UON + int. partners	Three briefs on different topics published and shared
Activity 2.2 Develop curriculum guidelines													ANAFE + all partners	Final guide
Activity 2.3 Develop NUS learning cases													ANAFE + all partners	Final learning cases
Activity 2.4 One day national meetings with educational institutions (new)													AU, LAAPT, UON + ANAFE	To disseminate curriculum guide and learning cases to universities and technical colleges Date to be decided
Activity 3.2 Expert evaluation of proposals for granting programmes													IFS + all partners	Partners may mentor scientists' proposal development
Activity 4.1 Develop and implement a project communication strategy													Bioversity, ANAFE, IFS + national partners + Associates	
Activity 4.2 Organize side-event on NUS at an African international meeting													ANAFE + all partners	Date to be decided
Activity 4.3 End of project workshop													All partners + Associates	Held back-to-back with Activity 4.2
Submission of final financial and narrative report												15	All partners	Final Project Reports to be submitted to Bioversity by 15 December.
EU-ACP Stakeholder conference														Date to be announced

Detailed work plan, Year 1

Result 1. National Action Plans

Activity 1.2 National study, Zimbabwe

- To be implemented as planned in Year 1, 2nd quarter
- This activity is conducted in Zimbabwe only, because both Kenya and Benin conducted similar studies in 2010
- The methodology used for these studies can be used for the Zimbabwe study
- Partners in Kenya and Benin to share their methodology with Zimbabwe

Activity 1.3. National innovation platform workshops

- To be implemented as planned in Year 1.
- The mapping of national stakeholders is important and urgent; national partners will start this immediately
- Time table for the national workshops to be decided as soon as possible (Bioversity to lead)
- Draw lessons that can benefit curriculum development activities
- It was proposed that project partners actively seek supplementary funding for Steps 2 and 3 of the national platform meetings. A concept note should be written to this end (CTA was mentioned as one possible donor).

Activity 1.4 Writing 3 National Action Plans on Bambara and amaranth value chains

- To be implemented as planned in Year 1 (key outputs in Year 1)
- Will focus on upgrading strategies (output of 1st stakeholder meeting)
- NAPs to be used by partners and stakeholders for additional resource mobilization

Result 3. Inter-disciplinary research on NUS value chains

Activity 3.1 Sub-regional NUS project proposal writing training

- All three courses to be implemented in Year 1, in the 3rd and 4th quarters.
- This means that budget for the Benin course is moving from Year 2 to Year 1

Activity 3.2 Expert evaluation of proposals for granting programmes

- To be implemented as planned in Year 1
- Partners may mentor scientists' proposal development, for improved quality of proposals to IFS granting programme.

Result 4. Communication of strategies, tools and methods

Activity 4.1 Develop and implement a project communication strategy

- To be developed as planned in Year 1, and implemented continuously
- Bioversity to lead the strategy development

Work plan, Year 2

Result 1. National Action Plans

Activity 1.3. National innovation platform workshops

- Partners will contribute to collective action and resource mobilization with a view to facilitate the further activities of the national stakeholder platforms

Activity 1.6 Develop policy briefs

- Draft briefs to be developed in Year 2 (three briefs on different topics)

Result 2. Integrating NUS value chains in higher education curricula

Activity 2.1 Regional NUS curriculum workshop

- To be implemented as planned in Year 2 (2nd or 3rd quarter)
- ANAFE to lead
- 2nd Project partner meeting to be held back to back with curriculum workshop

Activity 2.2 Develop curriculum guidelines

- Implementation starting in Year 2 (output: draft guide)
- ANAFE to lead

Activity 2.3 Develop NUS learning cases

- Implementation starting in Year 2 (output: draft outline of learning cases)
- ANAFE to lead

Result 3. Inter-disciplinary research on NUS value chains

Activity 3.2 Expert evaluation of proposals for granting programmes

- To be continued in Year 2

Activity 3.3 Organize 3 sub-regional courses on scientific communication

- All three courses to be implemented in Year2

Result 4. Communication of strategies, tools and methods

Activity 4.1 Develop and implement a project communication strategy

- To be implemented continuously

Work plan, Year 3

Result 1. National Action Plans

Activity 1.5 Organize sub-regional multi-stakeholder workshops

- To be held in Year 3

Activity 1.6 Develop policy briefs

- Three briefs on different topics published and shared

Result 2. Integrating NUS value chains in higher education curricula

Activity 2.2 Develop curriculum guidelines

- Implementation continuing in Year 3 (Final output published)

Activity 2.3 Develop NUS learning cases

- Implementation continuing in Year 3 (Final output published)

Activity 2.4 One day national meetings with educational institutions (new)

- Implemented Year 3
- Purpose is to disseminate curriculum guide and learning cases to universities and technical colleges
- Activity replacing translations at international meetings, which was seen as unnecessary

Result 3. Inter-disciplinary research on NUS value chains

Activity 3.2 Expert evaluation of proposals for granting programmes

- To be continued in Year 3

Result 4. Communication of strategies, tools and methods

Activity 4.1 Develop and implement a project communication strategy

- To be implemented continuously

Activity 4.2 Organize side-event on NUS at an African international meeting

- Implemented as planned in Year 3

Activity 4.3 End of project workshop

- Implemented as planned in Year 3
- Held back-to-back with Activity 4.2

Finance and administration

Milestones

Partners were informed on financial and administrative matters, including the preparation of Letters of Agreements with Bioversity, and on EU-ACP requirements for reporting. The following milestones apply:

- Feb 2014: Bioversity received 80% of ACP contribution to Year 1 budget
- March 31: draft LoAs with partners prepared
- 1-2 April: Joint stakeholder conference, Brussels. Per Rudebjer and Alberto Chiteka will represent our project.
- Nov 30: Year 1 activities completed
- Dec 15: Partners' financial and narrative reports submitted to Bioversity
- Jan-mid Feb 2015: Preparation Year 2 work plan and budget
- Feb 28 2015: Bioversity submission of Year 1 interim report to ACP Secretariat, accompanied by a forecast budget for Year 2.
- Payment for subsequent period will be made within 45 days of Contracting Agency's approval of the interim report.

The partners noted that there is a risk for a gap in activities in early Year 2 due to the time required for approval of interim report and disbursements of funds for following year.

Financial aspects

The total budget of the project (EUR 1,1,67,987) consists of two integrated parts:

- EU-ACP contribution = 85% of total budget, (EUR 992,789)
- Partners contribution = 15% of total budget (EUR 175,198, shared among all partners, as specified in contract with EU-ACP)
- **All partners must report both the EU-ACP contribution and their co-financing**, which Bioversity will then compile and submit to the Contracting Agency
- Expect microscopic review of financial reports by the Contracting Agency. **Getting it right the first time is the key to smooth project implementation, and a shared responsibility of all partners.**

Role of Associate organizations

The role of the project's Associate organizations were clarified (Table 3).

Table 3. Associate organizations' roles

Associate	Role
Exel Hort	• Value chain training • Curriculum development • ACP project will contribute networking etc. related to NUS • Applying project findings with partners
CORAF/WECARD	• Capacity development • Curriculum development • Regional communication strategy (good influence)
Global Horticulture Initiative	• Global/regional analysis and knowledge sharing • To be further discussed with Dr. Detlef Virchow

Urgent actions (next month)

The following list of urgent action items was agreed upon (most to be completed by mid April):

Action	Responsible
Report from Inception workshop	Bioversity
Share presentations (via Dropbox)	Bioversity
Monitoring & evaluation: • Country managers and Partners to regularly stay in touch with Project Manager • Virtual meeting every six month. (1June/July; 2) Oct. • Year 2. Face to face meeting (at regional curriculum WS) • Monitoring effectiveness and outcomes	 All Partners Bioversity to call the meeting Bioversity and ANAFE All partners
Detailed time plan to schedule Year 1 activities (use on-line scheduling tool)	Bioversity to coordinate
Letters of Agreement (March 31, draft ready)	Bioversity
Budget by partner (including deciding on where co-financing is to be included)	Per + all partners
Develop a project communications strategy, external + internal (see also below)	Bioversity + all partners and associates
Share EU-ACP templates for reporting	Bioversity
Ideas for supplementary proposals (e.g. CTA)	All
Communicate budget adjustments to EU-ACP	Bioversity

Publications to be developed during the Project

A list of expected products to be developed in the project was prepared (Table 4).

Table 4. List of products to be prepared during the project

Year	Title of product	Lead partner
Year 1	• National status report NUS study Zimbabwe • Minutes from national stakeholder platform workshops (B+K+Z) • Value chain upgrading strategies (B+K+Z) • National action plans (B+K+Z) • Reports from three Value Chain research proposal writing training workshops	Zimbabwe Benin, Kenya, Zimbabwe Benin, Kenya, Zimbabwe Benin, Kenya, Zimbabwe IFS, Bioversity, + national partners
Year 2	• Interim project report to Contracting Agency • Report from regional NUS Curriculum workshop (ANAFE) • Publicity products to summarize NUS curriculum workshop • Curriculum Guide (draft) • Training guide – Value chain development • Reports from three science communication training workshops	Bioversity ANAFE ANAFE + all ANAFE Bioversity IFS, Bioversity, + national partners
Year 3	• Interim project report to Contracting Agency • Policy briefs (3 different key topics) NOTE: need to allocate budget for French translation for Y2 • Reports from three sub-regional policy workshops • Curriculum Guide, English + French • Materials for side event on NUS /value chain • End of project workshop report • Final project report (by 31 March, 2016)	Bioversity Benin, Kenya, Zimbabwe with inputs from all Benin, Kenya, Zimbabwe ANAFE ANAFE End of project report Bioversity

Communications strategy

The partners contributed a number of ideas to be included in the project's communication strategy, which Bioversity will lead the development of.

Internal communication

- Sharing via Dropbox
- Virtual meetings of Partners/Associates (2014 June/Jul + Oct)
- Face to face meeting at Regional Curriculum development workshop in Year 2.
- Opportunities for regional regional exchange (e.g., Benin-Zimbabwe)

External communication

- Promotion of/links with regional networks (the West Africa Network on NUS, WANPNUS; ASARECA, Orphan Crop Initiative (should be invited to Eastern Africa stakeholder meeting)
- Bioversity's Knowledge management expert to advise, and prepare draft Communications strategy for further feedback from partners

- Link with:
  Crops For the Future (CFF) http://www.cropsforthefuture.org/
  NUS C ommunity, http://www.nuscommunity.org/
  Platform on Agrobiodiversity Research (PAR), http://agrobiodiversityplatform.org/
  etc.
- Use national, sub-regional and regional workshops for visibility (invite media, rural radio)
- Side event, International agricultural conference/event
- Linking with ANAFE incubators

Final comments and reflections

The project is on a mission to broaden the agricultural agenda to recognize diversity. The prevailing agenda is commodity-focused. We are working on ground-breaking topics and we wish to see policy makers re-direct funds towards NUS. For this message to get across, we need exceptional people – which we do have within our group of partners, associates and networks!

The policy briefs will be important tools for informing concerned policy makers, and their advisers, on evidence of NUS's potential to contribute to poverty alleviation, risk reduction, nutrition, etc. To this end, we will develop a series of several (at least three) briefs.

To influence curricula and to make curriculum change happen within the 3-year period we need to sensitize universities early on during the project cycle. An excellent opportunity to do so is at ANAFE's educational conference in Cameroon in late August. ANAFE kindly suggested that we could plan for a side-event, or similar, on NUS. A questionnaire (Monkey Survey) would help establish a baseline for future impact assessments, and would simultaneously help informing universities and colleges about the Project.

There is also great opportunity to involve students involved in entrepreneurship/enterprise activities. Ideally, the project should have earmarked funds for this, but this is currently not the case. Again, we need to look for alliances.

It is very important that the Project capitalize on the process set in motion at the 1st national stakeholder meeting. This meeting will raise expectations, but the Project can only meet some of those. If we can mobilize like-minded organizations in target countries, as well as regionally and internationally, around value chain upgrading activities and supportive research, we can have a win-win situation.

It would be desirable that national partners have an opportunity for cross-representation at the national stakeholder workshops, if a budget for such travel can be found.

There is an opportunity to bring in nutrition into many of the activities of the project: adding Bambara groundnut and amaranth to farming systems; cropping calendars that provide nutrients throughout the year; minimizing waste and conserving nutrients in value chains are but some nutritional aspects that link closely to the Project.

Annex 1. Inception workshop programme

Day 1 Wednesday 12 March 2014
Part I: Introductions, theory of change and situation analysis
08.30 Registration of participant 09.00 Welcome remarks Dr Jojo Baidu-Forson, Regional Director, Bioversity International Dr Aissétou Dramé Yayé, Executive Secretary, ANAFE Dr Alexandre Dansi, LAPPT 09.15 Introduction of participants 09.30 Value chains: basic issues and definitions *Matthias Jäger, Bioversity International* 09.45 Overview of the project's design, expected results and outputs Per Rudebjer, Bioversity International
10.15 Coffee Break and group photo
10.45 **Situation analysis Bambara groundnut and amaranth value chains** Overview of 'state of the art' regarding genetic resources, conservation, use, market potential, functioning innovation platforms, gaps and bottlenecks (25 min presentation + 5 min discussion for each crop) Bambara groundnut Dr Viktor W. Wasike, KARI Amaranth Dr Daniel Sila, JKUAT 11.40 Developing amaranth value chains: a regional and global perspective *Dr Fekadu Dinssa, AVRDC – The World Vegetable Centre* 12.00 Exercise - Mapping out similarities and differences in Bambara and amaranth value chains
12.30 Lunch
13.30 **Situation analysis: NUS conservation and use in target countries** Overview of research and development of NUS, institutional arrangements, conservation status, seeds and seed suppliers, policy environment (hindering, enhancing nus), capacity development, investments (25 min + 5 min discussion per country) Benin Dr Alexandre Dansi, LAPPT Kenya Dr Kiarie Njoroge, University of Nairobi Zimbabwe Dr Albert Chiteka, Africa University
15.00 Coffee Break
15.30 Visualizing the project's 'Theory of Change' and validating the project's logframe Dr Richard Hall, IFS 17.00 End of programme Day 1
Evening: Social dinner

Day 2 Thursday 13 March 2014
08.30 Overview of methods and tools for upgrading value chains: Multi-stakeholder (innovation) platforms Matthias Jäger 09.00 Experiences of value chain development in Eastern African Dr Andrew Ainomugisha, ExcelHort Consult 09.30 Nutrition-sensitive value chains Dr Gudrun Keding, Bioversity International
10.00 Coffee
10. 30 Regional perspectives on capacity for value chain development Dr Sidi Sanyang, CORAF/WECARD Prof James K'ungu, Kenyatta University 11.15 Mapping out key actors, projects and initiatives at national and regional levels that might complement the EU-ACP project, for added impact Dr Sebastian Chakeredza, ANAFE + Matthias Jäger 11.45 Final discussion on the situation analysis
12.30 Lunch
Part II: Project planning and administration
13.30 Verifying and, if needed, modifying the Project's 3-year plan of work plan Result 1. National Action Plans Result 2. Integrating NUS value chains in higher education curricula Result 3. Inter-disciplinary research on NUS value chains Result 4. Communication of strategies, tools and methods
15.00 Coffee Break
15.30 Developing a detailed work plan for Year 1 Planning of national stakeholder meetings is particularly important – these are the foundation for later outputs in terms of policy advice, education and capacity building, and national strategies.
17.00 End

Day 3 Friday 14 March 2014
08.30 Finance and administration, Letters of Agreement, EU-ACP requirements for reporting Per Rudebjer
10.00 Coffee
10.30 Publications to be developed during the Project 11.15 Knowledge sharing, communication and visibility actions
12.30 Lunch
13.30 Collaboration, networking and alliances – seeking win-win opportunities ANAFE 14.30 Any Other Business
16.00 Closing

Note:
Part I Attended by all
Part II Attended (primarily) by Project Partners and Associates

Annex 2. List of participants

Name	Organization	Country	Email
Mr Per Rudebjer	Bioversity International	Italy	p.rudebjer@cgiar.org
Mr Matthias Jäger	Bioversity International	Colombia	m.jager@cgiar.org
Dr Jojo Baidu-Forson	Bioversity International	Kenya	j.baidu-forson@cgiar.org
Dr Gudrun Keding	Bioversity International	Kenya	g.keding@cgiar.org
Dr Aissétou Dramé Yayé	African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), Kenya	Kenya	a.yaye@cgiar.org
Dr Sebastian Chakeredza	African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), Kenya	Kenya	s.chakeredza@cgiar.org
Dr Richard Hall	International Foundation for Science, Sweden	Sweden	Richard.Hall@ifs.se
Prof. Alexandre Dansi	Laboratory of Agricultural Biodiversity and Tropical Plant Breeding (LAAPT)	Benin	adansi2001@gmail.com
Dr Kiarie Njoroge	University of Nairobi, Kenya	Kenya	knkabuu@yahoo.com
Dr Albert Chiteka	Africa University	Zimbabwe	deanfanr@africau.edu; albertchiteka@gmail.com
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Apologies			
Dr Sidi Sanyang	The West and Central African council for Agricultural Research and Development (CORAF/WECARD)	Senegal	sidi.sanyang@coraf.org
Dr. Detlef Virchow	Global Horticulture Initiative (GlobalHort)	Germany	dvirchow@globalhort.org

Annex 3. Logical framework for the project

Revised at Inception Meeting 12-14 March, 2014

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions
Overall objectives	*What are the overall broader objectives to which the action will contribute?*	*What are the key indicators related to the overall objectives?*	*What are the sources of information for these indicators?*	
	Enhanced value chains of neglected and underutilized species (NUS) in Africa contributing to improved food and nutritional security, income of small holder farmers and entrepreneurs and mitigation of, and adaptation to climatic, agronomic and economic risks.	• Evaluations to demonstrate evidence of the outcomes of of NUS R&D interventions	• Evaluation reports • Agricultural. economic, commercial trade and data • Publications, media reports • Government reports	*N/A*
Specific objective	*What specific objective is the action intended to achieve to contribute to the overall objectives?*	*Which indicators clearly show that the objective of the action has been achieved?*	*What are the sources of information that exist or can be collected? What are the methods required to get this information?*	*Which factors and conditions outside the Beneficiary's responsibility are necessary to achieve that objective? (external conditions) Which risks should be taken into consideration?*
	1. Strengthened national and regional capacities for research, development, education on NUS value chain, and for communication of results to society	• Increased frequency of successful research proposal on NUS value chain development • Increasing number of multi-disciplinary research teams working on NUS in target countries • Increased submissions of Abstracts and Papers on NUS from scientists in target countries/sub-regions	• International Foundation of Science (IFS) database on research grant applications • International scientific journal databases	• Availability of research funds • Support by institutional leaders • Need to overcome institutional administrative and disciplinary obstacles to curriculum development

	2. National and regional policy actors, research and education institutions in West -, East-, and Southern Africa informed on the role and benefits of deploying NUS into strategies and programmes for agriculture, nutrition and adaptation to climate change	• More frequent mentioning of NUS in national and regional strategies and policies • NUS research more often cited in international conferences on African agriculture • NUS and value chain subjects in higher education curricula	• National and regional agricultural strategy documents • Proceedings of agricultural and development events • Publications, media and web coverage • Higher education prospectuses, reports	• Political openness • Access to resources for research and education • Effective linkages between agriculture and health and nutrition sectors, and between academia and private sector
Expected results	*The results are the outputs envisaged to achieve the specific objective.* *What are the expected results? (enumerate them)*	*What are the indicators to measure whether and to what extent the action achieves the expected results?*	*What are the sources of information for these indicators?*	*What external conditions must be met to obtain the expected results on schedule?*
	1. National action plans for value chain upgrading of Bambara groundnut and amaranth in Benin, Kenya and Zimbabwe prepared, and best practices and lessons validated with national and regional policy actors.	• National status report on NUS R&D and capacity in Zimbabwe • Research, capacity and policy issues regarding value chains of Bambara groundnut and amaranth identified in 3 countries. • Sub-regional dialogues held with policy actors, private sector and farmers and academia West Africa, Eastern Africa and Southern Africa • National and regional policy options for integrating NUS in agricultural, conservation and nutrition policies identified	• Detailed project implementation work plan • National study report, Zimbabwe • 3 national workshop reports • 3 National Action Plans • Documentation from 3 sub-regional policy dialogues	• Value chain stakeholders willing and able to attend national innovation platform meetings • Sub-regional stakeholders available to attend sub-regional meetings • Support of institutional leaders

2. Strategies and tools for integrating NUS into higher agricultural education curricula agreed with universities and technical colleges, and shared through African educational networks	• Training gaps and needs on NUS and value chain training for tertiary agriculture education assessed with key stakeholders at regional level • Curricular framework developed with universities, following the 5-stage DACUM approach developed by ANAFE • Curriculum guide on NUS value chains, and at least 2 learning case studies on NUS published	• Report from regional workshop on NUS curriculum development • Publications	• Availability of senior university staff and other stakeholders • Support by University Rectors and Faculty Deans for this initiative
3. Enhanced capacity in 3 African sub-regions to conceptualize and design inter-disciplinary research projects on NUS value chains, and to effectively communicate results to relevant stakeholders	• At least 75 natural and socioeconomic scientists trained in multi-disciplinary value chain research proposal writing • At least 75 natural and socioeconomic scientists trained in science communication	• Reports from training courses • Course evaluations • Database of trainees	• Support by trainees' supervisors
4. Strategies, tools and methods for strengthening NUS research, education and policy communicated to stakeholders	• Internet-based resources on NUS value chain, capacity building and policy accessible on partners' websites • Policy messages on promoting NUS in Africa's agricultural development disseminated regionally • End of project workshop held	• Website analytics • Reports from African agricultural forums • Final project report • Publications	• Good collaboration and knowledge sharing among project partners • Internet connectivity in some countries

Activities	*What are the key activities to be carried out and in what sequence in order to produce the expected results? (group the activities by result)*	***Means:*** *What are the means required to implement these activities, e. g. personnel, equipment, training, studies, supplies, operational facilities, etc.*	*What are the sources of information about action progress?* ***Costs*** *What are the action costs? How are they classified? (breakdown in the Budget* for the Action)	*What pre-conditions are required before the action starts? What conditions outside the Beneficiary's direct control have to be met for the implementation of the planned activities?*
	1.1 Inception workshop	1.1 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	1.1 Inception workshop report	Availability of funds from EU-ACP
	1.2 National study on NUS in Zimbabwe	1.2 Personnel, supplies, financial resources and facilities for organizing meetings	1.2 Report from national study, including list of priority crops	• Willingness of organizations to share information, including grey literature
	1.3 National innovation platform workshops on Bambara groundnut and amaranth	1.3 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	1.3. Workshop report, including lists of research needs, and capacity and policy issues	• Interest and support of stakeholder organizations
	1.4 Writing National Action Plans for each of three countries on Bambara and groundnut value chain upgrading	1.4 Personnel, supplies, communication, editing and printing capacity	1.4 National Action Plans published, partners websites	• Completion of Activity 1.3
	1.5 Organize sub-regional multi-stakeholder workshops on NUS in West, Eastern and Southern Africa	1.5 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	1.5 Workshop proceedings	• Completion of Activity 1.3 and 1.4 • Interest and support of stakeholder organizations
	1.6 Develop policy briefs to inform national and sub-regional strategies regarding NUS crops	1.6 Personnel, supplies, communication, editing and printing capacity	1.6 Policy briefs	• Completion of Activities 1.4 and 1.5
	2.1 Regional NUS curriculum workshop on assessing status of and strategies for strengthening NUS education	2.1 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	2.1 Proceedings of workshop, partners' websites	• Interest among stakeholder organizations to attend and share knowledge

2.2 Publish a curriculum guide on NUS education for universities, technical colleges and on-the-job training	2.2 Personnel, supplies, communication, editing and printing capacity	2.2. Publication, partners' websites	• Completion of Activity 2.1
2.3 Write and publish learning cases on NUS value chain upgrading	2.3 Personnel, supplies, communication, editing and printing capacity	2.2. Learning cases published, partners' websites	• Completion of Activity 2.2
3.1 Organize 3 sub-regional training courses on designing action research on NUS value chains with stakeholder consultation	3.1 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	2.3 Project reports, course evaluations	• Completion of Activities 1.3 and 1.4 • Sufficient number of qualified applicants
3.2 Expert evaluation of proposals for granting programmes	3.2 In-kind provision of mentorship by partner experts	3.2 Records of evaluations provided	• Young scientists writing and submitting grant applications
3.3 Organize 3 sub-regional courses on scientific communication	3.3 Personnel, supplies, financial resources and facilities for organizing workshops and meetings	3.3 Project reports, course evaluations	• Completion of Activities 1.3 and 1.4 • Sufficient number of qualified applicants
4.1 Develop and implement a project communication strategy	4.1 Personnel, ICT facilities including partners' websites, and email newsletters, supplies, financial resources and facilities for printing briefs	4.1 Communication strategy published and shared among partners and associates	• Partners providing up-to-date information non project progress • Sharing of publications among partners
4.2 Organize side-event on NUS at an African international meeting	4.2 Personnel, supplies, financial resources and facilities for organizing workshops and meetings4	4.2 Websites, project reports, publicity materials	• Supportive African organizations, such as FARA
4.3 Hold end-of-project workshop	4.3 Facilities for organizing workshops and meetings	4.3 Meeting report, Final project report.	• Timely completion of project activities and quality reporting
		Costs	
		What are the action costs?	
		€ 1,161,567.13	