# **Cluster of Activities Report Template**

**Cluster annual report - 2019**

**GLDC-FP1-1 - Foresight, climate change analysis & priority setting**

Sika Gbegbelegbe and Nedumaran Swamikannu

# MAIN ACHIEVEMENTS

There were four 2019 activities. The first one is entitled ‘Assess the ex ante multi-dimensional impacts of GLDC technologies in the drylands of SSA and South Asia’. The second one is entitled ‘Producer and end user preference assessment by gender - cowpea in Nigeria’, the third one ‘Market survey to identify preferred traits across the value chain actors for Chickpea and sorghum in India - linked with trait prioritization’ and the fourth one ‘Developing future climate scenarios data for GLDC mega environments for Asia and SSA’.

For the first activity, the deliverable consisted of a report entitled ‘Ex-ante nutrition security impacts of Research and Technology Options for Grain Legumes and Dryland Cereals in Sub-Saharan Africa and South Asia’. In this report, GLDC technologies were assessed and ranked based on their potential impact on nutrition security. Key findings suggest that in west and central Africa, the technologies with the largest positive impacts on nutrition security are early-maturing varieties and hybrids with tolerance to drought for sorghum; genetically diverse dual-purpose hybrid parents/cultivars with high and stable yields and with disease resistance for pearl millet; early-maturing, drought-tolerant hybrids which can give stable yields under severe drought conditions for pearl millet; insect-resistant lines and integrated pest management including biological control for cowpea; and drought-tolerant varieties and integrated crop management for cowpea. In eastern and southern Africa, the most promising technologies are intercropping compatible-varieties and integrated crop management options for pigeon pea; early-maturing varieties and hybrids with tolerance to drought for sorghum; stem borer/midge-tolerant cultivars for sorghum; and Striga-resistant varieties and hybrids for sorghum; and medium- to late-maturing anthracnose-resistant cultivars for sorghum. In South Asia, the most promising technologies are varieties resistant to Fusarium wilt and root rots for chickpea; Botrytis gray mold-resistant varieties for chickpea; herbicide-tolerant varieties to control weeds for chickpea; drought-tolerant varieties for chickpea; and varieties resistant to Fusarium wilt and Cercospora leaf spot for pigeon pea . The report represents a milestone which will feed into supporting priority-setting of GLDC technologies; it is a third report in a series which analyze the multi-dimensional impact of GLDC technologies. As of February 2020, there are 3 reports which provide an assessment of GLDC technologies in terms of their impact on social welfare (economic benefits), poverty and nutrition security. The results from these three reports will be used in 2020 to assess GLDC technologies based on their multi-dimensional impact. The final ranking of GLDC technologies based on their multi-dimensional impact would be useful to breeders in terms of setting breeding priorities for GLDC crops.

The second activity is linked to the project entitled ‘Accelerated Varietal Improvement and Seed Delivery of Legumes and Cereals in Africa’ (AVISA). In 2019, a literature review was conducted which led to the characterization of the cowpea value chain in Nigeria. In addition, interviews were conducted with cowpea traders to further define the value chain and identify key traits preferred by cowpea consumers. Preliminary results imply the following:

* Smallholder farmers in northern Nigeria are the main cowpea producers in Nigeria: they produce cowpea for their own consumption and sell the surplus
* Cowpea assemblers gather and sort cowpea which they buy from smallholder farmers; the assemblers receive and fulfill cowpea orders from large wholesale traders located in major markets in northern Nigeria (e.g. Dawanau)
* Large wholesale traders further sort and package the cowpea they receive from assemblers; the wholesalers in major markets in northern Nigeria supply southern Nigeria where white, brown and speckled cowpea are preferred

The survey of cowpea traders also showed that consumers in northern Nigeria prefer white cowpea. In southern Nigeria, depending on the region, consumers prefer brown or white spotted cowpea (Table 1).

Table 1: summary of key consumer preferences based on interviews with traders – Nigeria

|  |  |
| --- | --- |
| States in Nigeria | Preferred cowpea |
| North central region; North east region; North west region | White cowpea |
| South south region which includes Akwa Ibom, Bayelsa, Cross River, and Rivers states  South east region which includes Abia, Anambra, Ebonyi, Enugu, and Imo states | Aloka (white speckled) followed by white (big or small) and then brown (big or small) cowpea |
| South west region which includes Ekiti; Lagos; Ogun; Ondo; Osun; and Oyo states | Brown cowpea (small or big) followed by white cowpea |
| Edo and Delta states | White cowpea (big and rough texture) followed by any brown cowpea |

The third activity is also linked to the AVISA project. As part of this activity, stakeholders’ consultation was conducted in India for sorghum to identify the key market traits to be part of the product profile for sorghum. From the stakeholders’ consultation, it was identified that for rainy season sorghum in India, the market preferred or must have traits are the grains with white, larger globular, lustrous grains to attract good market price. Similarly, for kharif season sorghum the market or industrial preferred traits like higher starch (>68%) and medium protein content (8-10%) and higher protein digestibility. All these information was used to develop the updated sorghum product profile for India. In late 2019 a choice experiment was conducted with consumers in Tanzania to identify traits for Groundnut and Sorghum to develop product profile for these crops with the view to further employ latent class analysis for customer profile development. The data analysis is underway and the first deliverables for this activity is planned for 2020.

The fourth activity consists of developing datasets for future climates in the drylands of South Asia and sub-Saharan Africa. In this activity, future climate data were retrieved from Global Circulation Models (GCMs) by mega environment of drylands ecologies for Asia and Africa. These datasets can be used to assess the potential impacts of climate change on GLDC crops by mega environments in the target countries which could support in developing adaptation strategies relevant for the mega environment and also to identify the potential target regions for the technologies.

# Outcome cases and policy influenced (proposed)

Revise and complete the suggested list of outcome cases and policies to be documented

|  |  |  |
| --- | --- | --- |
| **Title of Outcome/ Impact Case Report (OICR) (30 words)** | **Description**  **(up to 80 words)** | **Geographic scope**  **(Specify if regional, national, sub-national and provide list of regions/countries)** |
| Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction | The outputs from cluster 1.1 would be used to support priority-setting of GLDC technologies by scientists involved in GLDC  These outputs could also be used by external partners, especially researchers in the NARS and policy-makers who might use the result to inform national policies related to GLDC crops | Drylands of SSA and South Asia |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name and description of policies modified in design**  **or implementation, informed by CGIAR research (20-50 words, ideally around 30 words)** | **Type**  **(policies/ strategies / laws/ regulations/ budgets/ investments/ curricula)** | **Whose policy is this?**  **The primary organization(s) either designing/promulgating the policy, law, investment (e.g. national government) etc. and/or within which it is operating.** | **Geographic scope**  **(Specify if regional, national, sub-national and provide list of regions/countries)** |
| There are no recorded policies which were informed by CGIAR research in cluster 1.1 for 2019 |  |  |  |
|  |  |  |  |

# MAIN ACHIEVEMENTS WITH GENDER RELEVANCE

For the deliverable linked to the first activity and entitled ‘Ex-ante nutrition security impacts of Research and Technology Options for Grain Legumes and Dryland Cereals in Sub-Saharan Africa and South Asia’, the analysis on nutrition security was conducted at national scale; hence, gender issues could not be considered.

For the second activity entitled ‘Producer and end user preference assessment by gender - cowpea in Nigeria’, the first deliverable which is slated for 2020 will contain results with gender relevance.

For the third activity entitled ‘Developing future climate scenarios data for GLDC mega environments for Asia and SSA’, the analysis is biophysical in nature and hence cannot consider gender.

# MAIN ACHIEVEMENTS WITH Youth RELEVANCE

For the deliverable linked to the first activity and entitled ‘Ex-ante nutrition security impacts of Research and Technology Options for Grain Legumes and Dryland Cereals in Sub-Saharan Africa and South Asia’, the analysis on nutrition security was conducted at national scale; hence, youth issues could not be considered.

For the second activity entitled ‘Producer and end user preference assessment by gender - cowpea in Nigeria’, the first deliverable which is slated for 2020 will contain results with youth relevance.

For the third activity entitled ‘Developing future climate scenarios data for GLDC mega environments for Asia and SSA’, the analysis is biophysical in nature and hence cannot consider youth.

# MAIN ACHIEVEMENTS WITH CAPACITY DEVELOPMENT RELEVANCE

Not applicable!

# MAIN ACHIEVEMENTS WITH CLIMATE CHANGE RELEVANCE

Nothing to report for 2019! However, it should be noted that the third activity entitled ‘Developing future climate scenarios data for GLDC mega environments for Asia and SSA’ should provide results which are very relevant in terms of climate change.

# MAIN GAPS AND CHALLENGES

For the deliverable linked to the first activity and entitled ‘Ex-ante nutrition security impacts of Research and Technology Options for Grain Legumes and Dryland Cereals in Sub-Saharan Africa and South Asia’, the key challenge met was related to not being able to incorporate Sudan in the analysis. As explained in the 2019 report for cluster 1.1, Sudan has not been included so far partly because there is was no 2005 disaggregated poverty data for Sudan.

For the second activity entitled ‘Producer and end user preference assessment by gender - cowpea in Nigeria’, the key challenge was related to the lack of good coordination across centers. The objective of the coordination is to harmonize analysis tools and reporting indicators.

# MEASURES TAKEN AND ADJUSTMENTS PROPOSED

Challenge for the deliverable linked to the first activity and entitled ‘Ex-ante nutrition security impacts of Research and Technology Options for Grain Legumes and Dryland Cereals in Sub-Saharan Africa and South Asia’: this challenge will be addressed in 2020 as the team involved in this activity develops manuscripts to submit to peer-reviewed scientific journals. More specifically, some disaggregated poverty data for Sudan that has been found will be used.

Challenge for the second activity entitled ‘Producer and end user preference assessment by gender - cowpea in Nigeria’: this challenge is being addressed by the staff involved, mostly through discussion.

# PARTNESHIPS: ACHIEVEMENT AND CHALLENGES

The 2019 activities mainly involved staff from IITA, ICRISAT and ICARDA. We don’t have other partnerships to report.

|  |  |  |
| --- | --- | --- |
| **Brief description of partnership aims (30 words)** | **List of key partners in partnership (one or more partners). Do not use acronyms.** | **Main area of partnership (may choose multiple),**  **Research/Delivery/Policy/Capacity Development/Other, please specify** |
|  |  |  |

Please include collaborations with one or more CRPs or Platforms – or in some cases with other Centers, if these are not already core partners for your CRP.

|  |  |  |
| --- | --- | --- |
| **Name(s) of collaborating CRP(s), Platform(s) or Center(s)** | **Brief description of the collaboration** | **Optional: Value added, in a few words** e.g. scientific or efficiency benefits |
|  |  |  |

# FUND RAISING

Our 2020 budget is not higher than in 2019. A higher budget would allow us to produce more outputs. In terms of bilateral fundraising efforts, we do not yet have specific plans for 2020; but, we are on the lookout for opportunities.