## Project Title
Supporting sustainable, climate resilient livelihoods for poor farming households in Bugesera

## Project Summary (In 75 words or less please summarise what your project intends to achieve and how)
Ngeruka Sector is located in an inaccessible, drought affected part of Bugesera in the Eastern province of Rwanda and experiences high food insecurity and malnutrition, extreme poverty, high levels of unemployment. The project would enable 912 poor households (3927 people) to reduce their dependence on subsistence cultivation systems increasingly affected by low rainfall, erosion and poor soil quality. Target households will be supported to adopt conservation agriculture including agroforestry to reduce erosion as well as to develop off-farm, climate resilient livelihoods revolving around integrated cropping techniques (using maize, beans, bananas, cassava, mushrooms, etc.) and livestock (rabbit, pigs etc.) production systems to enhance household incomes and reduce vulnerability to climate change.

## Anticipated Start Date (DD/MM/YYYY)
01/09/2015

## Project Duration (in months)
36 months

## Funding Requested (RWF)
RWF 460,719,807

## Name of Lead Organisation
AVVAIS in partnership with Bugesera District

## Type of Organisation, which best describes the Lead Organisation (please select only one box)
- [x] Government Institution
- [x] Non-Governmental Organisation (NGO)
- [ ] Private Sector Enterprise
- [ ] Academic Institution
- [ ] Other (please specify)

## Partner Institutions
1. ABADAHIGWA Cooperative in Ngeruka, Bugesera District
2. District Authority of Bugesera
3. Sector office Ngeruka, Bugesera
4. RAB (Rwanda Agriculture Board)

## Full Office Address
Gahanga - Nunga II, District of Kicukiro (Headquarters), P.O Box: 167 Kigali.
Mobile phone: (+250)788 556 911, 0783 780 286
E-mail: avvais_aper2004@yahoo.fr avvaiscso@gmail.com

## Website Address (if applicable)
http://www.avvais.org.rw/

## Contact Person (the person who will have ultimate responsibility and be accountable for delivering this project)
Name: NYIRAMANYANA Chantal
Position: Legal Representative
Email: avvaisngo@gmailcom ; avvaiscso@gmail.com; Tel: (+250)78556911
Is this a resubmission of an earlier submitted PD (if so please provide details)

For Internal Purposes Only: To be Completed by the Fund Manager

Date Received: _______________  PD Code: _______________
Date Comments Sent: _______________
Feasibility Study? (Y/N) _______________  PPD Code: _______________
Thematic Financing Window: ________________________________
FONERWA Entry Point: ______________________________
Technical Appraisal Score: ______  Rank: ______

National Climate Change and Environment Fund (FONERWA)
Full Project Document (PD)
(Please provide a complete answer to each question, even if the answer is duplicated elsewhere. This PD should not exceed 35 sides of A4 size paper.)

SECTION 1: INFORMATION ABOUT THE APPLICANT

Q 1.1 What is the Lead organisation’s total number of full-time employees?

AVVAIS has 8 full time employees:

1. Nyiramanyana Chantal: Coordinator
2. Djumapili Hussein: Project Officer/Project Manager
3. Nshizinyota Eric: Financial Manager
4. Gatera Guido: Technician
5. Mukamutungirehe Rose: Technician
6. Uwizeyimana Jeanne - d'Arc: Technician
7. Uwayigira Esther: Secretary/Clerk
8. Mukamurenzi Jeanne: Cleaner

Bugesera District has 43 permanent Staff.

An MOU between AVVAIS and Bugesera District is attached as an Annex to this proposal.

Q 1.2 What is your organisation’s experience of managing similar projects or activities (please explain why you think your organisation and partners are capable of managing the project)?

AVVAIS has been active in supporting IGA development and natural resources management with vulnerable groups since 2009 and has been operating in the target area since 2013. It has a core staff with competency in these areas, good links and support from the local authorities in Bugesera including Bugesera District Authority. AVVAIS is therefore well positioned and experienced to carry out this project effectively as the Project activities align well with priorities set out in Bugesera’s DDP (District Development Plan).

A list of relevant projects implemented by AVVAIS is provided below.

1. Protection of Cyohoha lake watershed in Ngeruka sector, Murama cell (2013 – 2014) funded by
1. Gef/SGP (Global Environment Facility / Small Grant Programme)/ UNDP – Rwanda. The project focused on Environment Protection and preventing Malnutrition and targeted vulnerable people in Ngeruka Sector, Bugesera District. The project collaborated with the Rwanda Agriculture Board (RAB) and supported 487 people from 98 households and protected 100 ha of fields around Cyohoha Lake from soil erosion.


3. **Project of Edible mushrooms in Rwanda** (2009 -2011) funded by Gef/SGP (Global Environment Facility /Small Grant Programme)/UNDP – Rwanda. The project focused on environment Protection for vulnerable people suffering from HIV/AIDS operating in 20 Cooperatives from Gisagara, Kigali, Rwamagana and Huye Districts. 36 permanent local Technicians were trained in Laboratory mushroom techniques and 400 households benefited from new IGAs.

4. **Project of Edible mushrooms in Rwanda** (2010 – 2011) funded by SEED INTERNATIONAL. The project focused on environment Protection for vulnerable people suffering from HIV/AIDS operating in 20 Cooperatives from Gisagara, Kigali, Rwamagana and Huye Districts. This Project won an International Prize “SEED Awards Winner 2011” in South Africa in partnership with UNEP, UNDP, IUCN, IDT and WCMC.

Bugesera District currently manages 70 ongoing projects.

The project implementer will be AVVAIS in partnership with Bugesera District. AVVAIS will be responsible for the overall implementation, M&E and donor reporting. Bugesera District will provide inputs and coordination support through a Project steering committee comprising the Vice Mayor in charge of Economic Affairs, the Environment Facilitator, the Forestry officer, the Veterinary Officer, the Executive secretary of Ngeruka Sector, the Agronomist of Ngeruka Sector and representatives from 9 beneficiary Cooperatives (from 9 villages - Rwabisheshe, Muyange, Nyakagarama, Rusamaza, Gashamba, Rubilizi, Kamugera, Kamugore and Rugazi) in Ngeruka Sector. The Project Steering Committee has already been formed and the minutes of its first meeting which informed the design of this project are attached as an Annex to this proposal.

AVVAIS will also lead the technology transfer and value chain development. AVVAIS will partner with Bugesera District and the Water and Sanitation Corporation limited (WASAC Ltd) to ensure the effective implementation of the improved water and sanitation component. There will also be provision to bring in specialist support for marketing and livestock and aquaculture specialists on a consultancy basis.

WASAC Ltd is a commercial public company in Rwanda specialising in providing water and sanitation services. WASAC Ltd. will be sub-contracted by the project to provide technicians to install water taps and other necessary equipment for Rainwater harvesting in the 9 target villages under Output 3: Improved access to rainwater harvesting techniques.

**Q.1.3 List** the name, position, and email of key personnel involved in the project, such as the project executive, project manager, and core technical staff. (Provide a CV for each of the key personnel as an attachment to this PD)

AVVAIS will put in place a strong team comprising: a Project Co-ordinator, 2 Community Workers, a Marketing Officer, an Administrator and Finance Officer. In addition, the project will recruit a community volunteer from each of the nine villages in order to initiate 9 cooperatives in Ngeruka Sector to increase community engagement and root the leadership of the project within the target group as well as to maximise the efficiency of delivering project interventions. AVVAIS will be assisted by government staff from...
Ngeruka Sector in establishing the Cooperatives Representative team in Rutonde Cell (Bugesera District). The committee will consist of a President, a Vice – President, an Accountant, and 2 Advisers. The AVVAIS team will comprise:

1. **Project Manager:** Ir MSc. DJUMAPILI Hussein as acting Project Manager of AVVAIS since 2009 with 6 years of work experience in Project Management including 4 years as Project Manager in Environment program under Gef/SGP and 3 years with a German NGO/Huye as an Agronomist on an Agroforestry project.

2. **Marketing Officer:** Ms NYIRAMANYANA Chantal as acting Representative of AVVAIS to improve the standard of living and quality of life for vulnerable women since 1999 with 14 years of work experience; World Food Programme, UNDP (2007), Belgium Embassy (2006), British Embassy (2003), Gef/SGP-UNDP (2009 -2013), Global Funds Rwanda (Ministry of Health) (2006- 2014), etc. At AVVAIS CSO, the Representative is also in charge of marketing for members’ Cooperatives goods and products.

3. **Finance Officer:** Mr NSHIZINYOTA Eric is the acting Accountant for AVVAIS since 2013.

4. **Administrator:** Mr GATERA Guido, is experienced in administrative tasks since 2012.

5. **Technicians:** Ms UWIZEYIMANA Jeanne d’Arc and Ms MUKAMUTUNGIREHE Rose are competent technicians in producing shrubs in nurseries and experienced in edible mushrooms spawns activities in AVVAIS’s Laboratory since 2009.

CVs for the key positions are attached as an annex to this proposal.

**Q 1.4 Lead Organisational Finances. Provide a copy of these** from the most recent audited annual accounts (income and expenditure statement and balance sheet in RWF, as well as the main sources of funding) as an attachment to this PD.

Copies of AVVAIS’s audited accounts are attached as an Annex to this proposal.

**SECTION 2: INFORMATION ABOUT THE PROJECT**

**Q 2.1 Why is the project needed (clearly state the problem this project will address and the evidence base for its justification. Where possible, refer to international, national and/or sectoral strategies.)?**

Bugesera district is part of the Eastern Province and situated directly south of Kigali bordering Burundi. The terrain is characterised by plateaus, undulating hills and dry savannas with grasses, shrubs and short trees. There are 3 rivers, the Akanyaru, Akagera and Nyabarongo flowing through the district and there are 9 lakes.

The climate is dry and the district has been affected by desertification although a number of measures introduced by the government were successful in reversing this trend. However, climate projections suggest that the annual average temperature in Rwanda will increase by 1.5-2°C by 2050 which is likely to increase the incidence of drought in this district. With increasing population growth, a dependence on rainfed agriculture (68% of people over 16 are independent farmers and agriculture contributes 46% to household income) and high poverty levels (48% of the population is poor including 28% who are extreme poor and 20% who are poor) droughts are potentially catastrophic events for the local population.

Bugesera also has a very young population (56% of the population is under 19 years of age) and generating employment for the labour force is a major challenge for the local Government. Landholdings are very small for many households with 71% of farming households cultivating less than 0.9ha of land and a high percentage (30%) cultivating less than 0.3ha. Considering these small land holdings, the low yields and that the average size of a household in Bugesera is 4.9, many families engaged in agriculture face food shortages.

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1 EICV 3 District profile for Bugesera.
2 EICV 3 District profile for Bugesera.
Water security is also a problem with 29% of households in Bugesera still using an unimproved drinking water source including 24% using surface water from lakes or rivers. 30% of households are women or de facto women headed households and dependence on agriculture is higher among women compared to men (75% of women are small-scale farmers) making them more vulnerable to climate change.

The target area comprises nine villages (Rwabisheshe, Muyange, Nyakagarama, Rusamaza, Gashamba, Rubilizi, Kamugera, Kamugore and Rugazi in Ngeruka Sector) and is situated in a remote area of Bugesera with poor road access and limited services available to the population. There is no electricity or running water and housing and sanitation conditions are poor. There are high levels of malnutrition due to food insecurity which is linked to a high dependence on low production, subsistence agriculture, a lack of skills and off farm income generating opportunities. Superimposed on these issues, changing rainfall patterns have reduced agricultural production and worsened food security for many households.

The reliance of people in this area on biomass for fuel has also led to deforestation and soil erosion reducing agricultural productivity and causing high levels of runoff into the nearby Lake Cyohoha South. The failure of the local community to follow the Government’s zero grazing policy also results in overgrazing (raising livestock is a common practice in Bugesera district with 78% of households raising some type of livestock) which further exacerbates the erosion. High poverty levels and water insecurity prohibits the investment needed to improve soil conditions, water crops at kitchen gardens and enhance productivity locking households into long-term poverty and food insecurity.

The lack of employment opportunities in this area compels the community to rely on farming for their food and income needs. As well as lacking the necessary skills and assets to diversify out of farming, these households have poor access to developed value chains for the supply of inputs and linkages to high value markets. In order to escape the cycle of poverty and reduce their vulnerability to projected climate change, target households need to adopt a more climate resilient approach to farming by reducing their dependence on rain fed agriculture and diversifying their livelihoods to include low risk, climate resilient enterprises.

AVVAIS has been working closely with the local authorities at the cell and District level in the target area since 2013 and the activities of the Project are closely aligned with Bugesera DDP (District Development Plan) priorities in terms of water and sanitation, agroforestry systems and forestation including horticulture and legume planting, and agriculture targeted in land consolidation by cassava cultivation, land protection against soil erosion by planting hedges, agroforestry trees and fruits trees over an area of 100 ha in and around the 9 target villages.

Q 2.2 What change is this project intended to achieve (state specific objectives, expected results/impact and long-term legacy. To address the core environment and climate change objectives of the project, it would be helpful to refer to national and sectoral climate change and environment objectives. Provide measurable indicators, within a log-frame matrix. In addition, make a note of the expected impacts on employment and poverty reduction, as well knowledge and technological transfer.)?

The objective of the project is to support climate resilient livelihoods, enhance household incomes and promote sustainable land use. A log-frame matrix with measurable indicators is included with the work plan and budget in the EXCEL worksheet. The project will target poor 912 households in 9 villages in Ngeruka sector.

Expected results and impact on poverty reduction, employment creation and knowledge and technological transfer
Support for the development of fish, livestock and mushroom production systems will enable subsistence farmers to adapt to climate change by creating income generating activities, enhancing household incomes.

3 EICV 3 District profile for Bugesera.
and reducing their dependence on rainfed agriculture (which will be most affected by changing rainfall patterns and rising temperatures) enabling them to graduate out of extreme poverty. Promotion of conservation agriculture will reduce erosion, enhance soil fertility and increase agricultural productivity while the value chain approach will create employment and further enhance incomes.

**Improved access to rainwater harvesting techniques and sanitation through safe drinking water** will enhance water security and reduce the incidence of water-borne diseases and ensure that food products are handled in a hygienic environment to minimise contamination before sale. It will also reduce the time women and children spend fetching water, reducing their workload so they can participate more effectively in economically productive activities and education.

A strong emphasis on M&E and knowledge management will enable the project to adapt according to any new conditions that arise and to promote sharing and learning as well as to build community knowledge and capacity. This will promote and facilitate technology transfer, cross learning and replication in other areas to promote sustainability and scaling up.

**Alignment with national, sectoral and district climate change and environment objectives**

The project directly contributes to one of the six priorities identified in the National Adaptation Programme of Action: “promotion of income generating activities, which aims to improve the adaptation capacity of rural populations vulnerable to climate change through the promotion of income generating non-agricultural activities”.

The proposed project also aligns with following EDPRS II priorities:

- **Priority 2 under Rural Development: Productivity and Sustainability of Agriculture**
- **Priority 3 under Rural Development: Graduation from Extreme Poverty specifically 3.1: Increased and sustained graduation from core social protection programmes for male and female headed households by connecting them to economic opportunities and financial services**
- **Priority 4 under Rural Development: Connect Rural Communities to Economic Opportunity through Improved Infrastructure specifically 4.5 Increased access to water and sanitation facilities in rural areas**
- **Priority 3 under Productivity and Youth Employment: Stimulate Entrepreneurship, Access to Finance and Business Development by increasing off-farm employment, productivity and new job creation driven by the private sector to boost entrepreneurship and job creation.**

One of the objectives of the new Environment and Natural Resources Sector Strategic Plan (2014 - 2018) is also relevant: “to ensure that development in Rwanda is undertaken in a manner that inflicts minimal damage to the environment, and builds resilience to threats posed by climate change for the sustained support to economic, social and cultural development of Rwanda.”

The project also aligns with one of the key strategic objectives of Rwanda’s National Green Growth and Climate Resilience Strategy: “achieving social protection, improved health and disaster risk reduction that reduces vulnerability to climate change”. The project is also relevant to the following key Programmes of Action in the strategy:

- Sustainable intensification of agriculture
- Agricultural diversity in local and export markets
- Integrated approach to sustainable land use planning and management
- Sustainable forestry, agroforestry and biomass energy
- Disaster Management and disease prevention.

Finally, at the local level, the project aligns with two of the five priorities set out in the Bugesera DDP: promotion of fish farming and increasing off-farm activities.
Q 2.3 **How will the project objectives be achieved (include a detailed Work Plan as an appendix highlighting key deliverables and activities and responsibilities. Clearly describe the approach and methodology to be followed and the sequence of activities planned.)?**

A detailed workplan highlighting key activities and responsibilities is attached with the budget. The project will target 912 households in 9 villages.

<table>
<thead>
<tr>
<th>Village</th>
<th>Households</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabumbwe</td>
<td>153</td>
<td>621</td>
</tr>
<tr>
<td>Kamugera</td>
<td>63</td>
<td>305</td>
</tr>
<tr>
<td>Kamugore</td>
<td>94</td>
<td>361</td>
</tr>
<tr>
<td>Rugazi</td>
<td>100</td>
<td>439</td>
</tr>
<tr>
<td>Rubirizi</td>
<td>80</td>
<td>364</td>
</tr>
<tr>
<td>Agashyamba</td>
<td>133</td>
<td>528</td>
</tr>
<tr>
<td>Nyakagarama</td>
<td>86</td>
<td>368</td>
</tr>
<tr>
<td>Shami</td>
<td>104</td>
<td>487</td>
</tr>
<tr>
<td>Rwabisheshe</td>
<td>99</td>
<td>454</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>912</strong></td>
<td><strong>3927</strong></td>
</tr>
</tbody>
</table>

The project will have four outputs:

1. Diversification of livelihoods with support for climate resilient production systems suitable for smallholder farmers;
2. Promotion of conservation agriculture (agroforestry, fodder crops, intercropping, horticulture and legumes, etc);
3. Improved access to water harvesting techniques and sanitation through safe drinking water and sanitation facilities and hygienic practices adopted; and
4. Grant efficiently managed and M&E including lessons learned to promote replication in other areas.

**Proposed approach**

The proposed approach will emphasise community participation, consulting and involving all stakeholders in the development process from the start of the planning process. The Project will recruit and train a team that will include technicians and community volunteers to ensure day-to-day support for the target beneficiaries. In addition, the project will train community volunteers from each village to maximise skills transfer and support from the community.

For the efficient delivery of project interventions, the beneficiaries will be supported to form cooperatives. This will enable the project to develop the skills necessary to maximise production and quality as well as achieve economies of scale in rolling out support services. Regular community meetings have been built into the workplan and budget to review progress. Resources will also be allocated to awareness building, advocacy and community mobilisation to achieve the buy-in and support of the local community. By having two community volunteers permanently stationed in the field, the project will be able to provide weekly capacity building sessions in each village. In between visits from the community workers, the community volunteers will provide follow up and support to target households. There will also be technical backstopping from District Authority staff (agronomist, livestock/veterinary and environment officers).

The project will adopt an interactive management process that continually evaluates interventions as conditions evolve and as new knowledge is developed (see Output 4 below). The rationale for the
interventions and the main activities are described under each output below.

**Output 1: Diversification of livelihoods with support for climate resilient production systems suitable for smallholder farmers.**

Climate resilient livelihoods will be supported by developing and promoting market-oriented, diversified production systems. Three value chains (i.e. the whole series of activities that create and build value at every step from production through to processing, packaging and sales and marketing of products to buyers) have been identified as suitable for this area during the 1st Phase: rabbit rearing, pig rearing and mushroom production. The products (mushrooms, pigs and rabbits) will be supplied to buyers as raw materials. The project will initiate a series of farmer field trials to test different approaches and systems before scaling up to the wider target group. These trials will involve the recruitment of motivated farmers that have the potential to become extension agents in the later stages of the project. The livestock and cropping production systems will be integrated so that the waste products are recycled to improve productivity, lower the cost of production and increase profitability.

**Rabbits** will be reared near to each household so that the droppings can be collected to provide a continuous source of organic fertiliser for agricultural production. Rabbit manure has very high nutrient levels with a relative Nitrogen - Phosphorous - Potassium (NPK) content of 2-1.3-1.2. Rabbits also have a fast reproduction rate (2 rabbits can produce 36 offspring per year) and the growth rate is comparable to a modern broiler chicken but is more affordable to the local population at Rwf 2000 and can be sold from 6 weeks to create a regular income. Two female rabbits can generate an income of Rwf 12,000 every quarter for very little cost since the feed can be collected locally. Rabbit furskin can also supplement household incomes.

**Pig** production will generate a good source of meat and manure for fodder and other crop production. Under favourable conditions of management (feeding on forage and leftovers), a good sow or gilt can produce two litters/year and raise about 7 piglets/litter. The piglets are weaned at the age of 8 weeks and the growing animals are ready for market at about 1-1.5 years fetching between Rwf 50,000 – 100,000. Piglets can also be sold after 3 months for around Rwf 15,000 per piglet. The project will build the capacity of target households to rear pigs and will establish links to a slaughterhouse, pork processors and pig breeders. The manure will be collected and used to fertilise surrounding agricultural land.

**Mushroom** spores will be generated and cultivated in AVVAIS’s mushroom production facility after which they will be transferred to the six specially constructed grow-out buildings already in place in Rwabisheshe village. After harvest, the mushrooms will be collected, processed, packaged and delivered to wholesale and retail outlets in Kigali. Mushroom manure will be used as a source of fertiliser on land (under Output 2).

Value chain analyses will be carried out during the first quarter of year 1 to better understand the market dynamics and supply requirements. The project will act as an intermediary between the producers and high value markets in Kigali. This will transfer the market risk from the beneficiaries to the project by guaranteeing the **purchase, distribution and sale** of the product. The product will be aggregated by the cooperatives (producer organisations) to enable it to be collected, transported and sold at scale.

Activities under the livelihoods output will include: community mobilisation, value chain analysis, awareness building, carrying out trials on the different production systems to optimise management regimes, training for producers, market research, marketing and promotion of products, value addition (processing and packaging), establishing cooperatives, capacity building of co-operatives, transport and distribution of fish and mushroom products, and drafting and signing of contracts between the project and the co-operatives.

Specific activities under Output 1 include:

1. Recruit and train project staff
2. Awareness raising, community mobilisation, needs assessment
3 Develop participant selection criteria and train project participants
4 Establish cooperatives (selection of members, election of committees, adoption of bylaws, sign contracts, capacity building etc.)
5 Select participants for trials (must be motivated and capable of becoming model farmers)
6 Carry out trials for the different livestock production systems (purchase inputs, construction of pig pens, feeding etc.)
7 Carry out trial pen culture production system (fry, grow out, feeding etc.)
8 Adoption of integrated livestock production systems by participants
9 Adoption of mushroom production systems by participants
10 Marketing and distribution of products

Output 2: Promotion of conservation agriculture (agroforestry, fodder crops, intercropping etc.).
As the project gets underway, it is recognised that many households will continue to farm their plots as well as adopt new income generating activities supported by the project. This is a sensible risk reduction strategy for any poor, rural household. The project includes a component therefore to promote conservation agriculture over 2000 Ha as a measure intended to reduce erosion, enhance soil fertility and increase agricultural productivity.

Conservation agriculture (CA) aims to conserve, improve and make more efficient use of natural resources through integrated management of available soil, water and biological resources combined with external inputs. It is popular with farmers due to the lower costs and labour requirements as well as greater water retention. This frees up time for farmers to engage in other IGA’s. CA also reduces crop vulnerability to extreme climatic events. In drought conditions, it reduces crop water requirements by 30%, makes better use of soil water and facilitates deeper rooting of crops. In extremely wet conditions, CA facilitates rain water infiltration, reducing the danger of soil erosion and downstream flooding. There are three key elements to CA: minimal soil disturbance, permanent ground cover, and rotation.

A permanent organic soil cover is achieved by leaving crop residues on fields or growing cover crops. Minimal soil disturbance requires that rather than tilling, farmers use hoes to make planting basins (about 15 cm across and 15 cm deep) to plant seeds and apply fertiliser directly into the soil. Rather than spreading nutrients and water uniformly over the field, concentrate them in the basins to maximize yield for a given level of inputs. Basins are prepared during the dry season, when demands on family labour are relatively low. When the rains begin, the basins are flooded with water. Only small quantities of fertiliser are required since it is applied near the plant (i.e. in the basins) at the 5-6 leaf stage.

Cereals are rotated with legumes which fix nitrogen and help succeeding crops. Crop rotations, cover crops, and the use of integrated pest management technologies promotes healthy soil conditions. Agroforestry is also incorporated into CA to provide fruit and wood and also to create contour hedges for erosion control, to conserve and enhance biodiversity, and to promote soil carbon sequestration.

CA reduces erosion, improves water retention, increases nutrient recycling and improves the physical and biological health of the soil as a result of mulching (of accumulated plant litter at the soil surface, rich in organic carbon and nutrients) and reduced disturbance. The ground cover and mulch also increases soil biodiversity and create good conditions for beneficial insects which control pests. Gradually, organic matter of the surface layers increases, reducing erosion and increasing yields which also results in increased carbon sequestration.

CA is not currently practised in this area and hence resources have been allocated to build awareness of the benefits among farmers. A training needs assessment will be carried out and appropriate session plans developed to build capacity of farmers to engage in CA. The area will be fenced to prevent livestock from grazing and destroying crop residues.

In Agroforestry, fencing (hedges) is used by “small plants species” preferably leguminous such as *Calliandra calothyrsus*; *Leucaena leucocephala*; *Tephrosia vogelii*, etc. These fencing plants create boundaries between villagers’ fields to avoid conflicts; fencing leaves can also be used as cattle fodders (*Calliandra calothyrsus*; *Leucaena leucocephala*) and branches can be used for households’ fire. Agroforestry fencing plants play a role as a green fertiliser by fixing the atmospheric nitrogen into the soil through the rhizobium bacteria contained in all leguminous roots. *Tephrosia vogelii* known as “Imiruku” (Rwandese vernacular name) acts as a green fertiliser and insecticide against the termite but is not a good fodder. *Calliandra calothyrsus*, *Leucaena leucocephala* and *Tephrosia vogelii* are effective wind-breakers for crop protection while *Calliandra calothyrsus* protects fields against fire hazards.

Promotion of **agroforestry and conservation agriculture** will be achieved by: awareness campaigns, farmer field trials, training, cross visits and the supply of inputs. The approach will emphasise an experiential learning process which encourages farmers to observe and analyse the results of farmer field trials so they are able to adapt in future to build capacity for climate resilient farming practices.

The project will create a riparian buffer zone between the villages and the lake in line with the Organic Environment Law and will promote CA in farmers’ fields. Tree nurseries will be established in each village to create a steady supply of saplings for planting. Seedlings will include: *Spathodea campanulata*, *Croton megalocarpus*, *Grevillea Robusta*, *Cedrella serrata*, *Maesopsis eminii*, *Polyscias fulva*, *Marcamia spp*, *callindra* *calothyrsus*, *Leucaena leucocephala* and *Tephrosia vogelii* are effective wind-breakers for crop protection while *Calliandra calothyrsus* protects fields against fire hazards.

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Several meetings between AVVAIS and District Authorities have been held to discuss proposed drought resistant crops to be promoted. Drought resistant crops should generally be vegetative, short – cycle e.g the varieties of beans known locally as “Shyushya”; “Rubona V” and “Rwanda Rushya” which are ready for harvesting in 2 months and a variety of beans known by villagers as “Mutiki” which can be harvested in 3 months. The variety of Maize known as *Katumani* can also be harvested after 3 months, while the *pleurotus spp* of edible mushrooms can be harvested after 2 weeks during the dry or rainy season. Two varieties of bananas “Fhia 25” and “Fhia 27”, sweet and bitter varieties of cassava can also be produced in Bugesera fields. Plum, Lemon, Orange, Avocado and Mangoes, all drought resistant fruit trees will be planted in target areas. AVVAIS’ partnership with RAB (since October 2012) regarding agriculture and animals breeding activities will also be drawn on as this component of the project evolves (See the attached document Partnership RAB – AVVAIS No:R/AV063/2012).

The ownership and maintenance of trees planted in the buffer zone will be transferred to the project beneficiaries committee (local people) under the guidance of project staff and in accordance with bylaws drafted and agreed by all parties to avoid trees being cut down for firewood or cultivation. Trees planted in the buffer zone will automatically become the property of Rwanda Government under REMA management and felling without official authorization will not be permitted.

The project will provide equipment (hoses, spades, knifes, plastic bags, watering cans, etc. and the initial labour required for watering saplings in the riparian buffer zone of Cyohoha lake, contour hedging and agroforestry shrub plantations in village fields around South Cyohoha Lake.

Techniques will be tested and evaluated by farmers in farmer field trials and workshops. The project will then arrange cross visits from the wider community so that the lead farmers can showcase the results to promote the adoption of CA throughout the local area. Improved management practices can then be
introduced through a farmer field school approach (currently widely used by RAB to promote best practice).

Specific activities under Output 2 include:

1. Awareness campaigns
2. Training of project participants and follow up
3. Preparation of land
4. Supply of inputs
5. Farmer field trials
6. Farmer meetings to review trial results
7. Adoption of conservation agriculture by project participants
8. Restoration of 10 ha of the buffer zone with planting of agroforestry trees species (Cacia siamea and Cacia Spectabilis former trees species destroyed in buffer zone were Cacia spp.) and aforestation using the “Quincunx” model (chessboard composition) with a spacing of 2m by 2m per tree per line of plantation.

According to FSRP/DSA Publication No. 3E, data and analyses indicate that smaller Rwandan farms are often cultivated more intensively (more inputs, labour, and conservation investments per hectare) than larger farms. This increased production intensity on smaller farms has been associated with higher yields per hectare in the past. In other words, smaller farm size can stimulate intensification providing that available technologies are profitable and farmers have the necessary human and financial capital to adopt more intensive practices. The viability of conservation agriculture is associated with the soil nutrients conservation. Any agricultural activities that leave the land depleted after harvesting are not compatible with conservation agriculture goals. In most fields in Rwanda, farmers have to fertilise the grounds using chemical or organic fertilisers every season before planting and sowing as the soil structure and texture has already been destroyed by intensive agriculture activities over preceding years. Conservation agriculture is suitable in Ngeruka Sector/Bugesera because the area is semi-arid and features dry soils that require fertilisation, protection and watering.

Output 3: Improved water harvesting techniques and safe drinking water

The aim of improving access to water harvesting techniques and safe drinking water for animals breeding and sanitation facilities is to enhance water security for domestic use, livestock rearing and conservation agriculture as well as to reduce the time spent fetching water (leading to improved economic status), improve hygiene and to reduce the incidence of water borne diseases such as diarrhoeal episodes and skin infections due to increased hand washing as required for mushrooms production techniques. It is also expected to contribute to improvements in household income levels and security of livelihoods; reduced workloads for women; increased kitchen garden production (using waste water); improved livestock production; increased school attendance and better child care. This component is likely to benefit women and children the most as they are usually responsible for water collection.

Improving access to rainwater harvesting techniques and safe drinking water through water pumps and rainwater collection through households roofing gutters facilities and ensuring that hygienic practices are adopted will entail understanding the need and demand as well as involving the users in selecting the technology (to ensure it fulfils their needs). The project will supervise a qualified Wasac Ltd contractor concerning rainwater harvesting to install rainwater roofing gutters for rainwater collection in connection with households’ kitchen gardens watering mechanism and domestic animal breeding sanitation especially for pigs and rabbits. It will also be necessary to establish a tariff structure to recover the recurrent costs of operating and maintaining the infrastructure. Awareness building, education and training for target households will be carried out to ensure that the facilities are used and maintained properly. The project will also support the creation of a watsan management committee and develop their capacity to manage water supply services and sanitation. This will entail developing operation guidelines as well as training for committee members to maintain the infrastructure, oversee the service, collect and keep records of
Specific activities under Output 3 include:

1. Installing rainwater harvest points (9 rainwater pumps) including roofing gutters for rainwater collection from households’ houses.
2. Awareness, education and training for target households (posters, meetings etc.)
3. Creation of watsan management committee
4. Development of operation guidelines
5. Training for committee to maintain infrastructure

The tasks will require the installation of rainwater harvest points in 9 villages in the related project sites and will be carried out by qualified WASAC technicians who will install 9 pumps and equipment for rain water collection through rooftop guttering systems.

Output 3 is essential in providing the necessary water and sanitation facilities for components 1 and 2 and ensure the viability and sustainability of conservation agriculture practices, household kitchen garden production and agro–sylvopastoral practices which require a permanent supply of water.

Rainwater harvested from installed pumps will not be used for watering the fields but for watering the nurseries and household kitchen gardens using watering cans and for cleaning households’ and the production of organic manure from pig and rabbit wastes.

It will not be necessary to water the fields as the selected seed varieties are those adapted to drought areas such as Bugesera. e.g. local varieties of beans (Shyushya, Rubona V and Rwanda Rushya, Mutiki, the maize variety (Katumanil), pleurotus spp of edible mushrooms, bananas (Phia 25 and Phia 27) all recognised by RAB and the Ministry of Agriculture in Bugesera District.

Output 4: Grant efficiently managed

Lessons learned from similar projects identified which have informed the design of this project are described below.

1. Protection of Cyohoha lake watershed in Ngeruka sector, Murama cell (2013 – 2014) funded by Gef/SGP (Global Environment Facility / Small Grant Programme)/ UNDP – Rwanda. The lessons learned from this Project include:
   - Planting agroforestry trees species and growing edible mushrooms is a viable livelihood option for vulnerable people if livestock rearing and other agriculture activities (growing beans, maize, bananas, etc.) are included;
   - Ngeruka local Authorities have argued that edible mushroom production is important for nutrition but identifying a suitable market and processing of edible mushrooms is needed to add value;
   - During the transplantation of Shrubs from nurseries to fields, shrubs have to be mature enough to resist drought;
   - Local people prefer more fruits shrubs than non – edible agroforestry trees species.

2. Single Stream Funds for HIV/AIDS (2011 – 2013) funded by Global Funds – Rwanda. This Project supported 780 beneficiaries in Cyanzarwe, Mudende, Nyakiliba and Kanzenze sector in Rubavu District. The project trained 435 people and distributed 108 dairy cows to beneficiaries’ cooperatives. According to the Project final results, we have learned that feeding, medicating, lodging, etc. hybrid dairy cows are very expensive for vulnerable people with only long-term profits. This project design therefore considered small animals with short production cycles, low input costs and the potential to generate fast incomes and profits to be more appropriate for vulnerable people compared to cows.
3. **Project of Edible mushrooms in Rwanda** (2009-2011) funded by Gef/SGP (Global Environment Facility /Small Grant Programme)/UNDP – Rwanda. AVVAIS Won an International Prize titled “SEED Winner 2011” from UNEP (United Nations Environment Programme) in Partnership with UNDP in Pretoria. The key lesson learnt was that the results of good practice in a local organisation such as AVVAIS Rwanda can be visible internationally. The aspect of good practice of the Project in entrepreneurship was considered during the Project design in creating “entrepreneur cooperatives”

4. **Project of Edible mushrooms in Rwanda** (2010 – 2011) funded by SEED INTERNATIONAL. The lesson learnt through the results of this Project was the SWOT analysis. And it was considered during the Project design to determine the risks during the project activities implementation by AVVAIS in terms of level: Low, medium or high.

The Output 4 comprises a **separate M&E and knowledge management** component to enable the project to adapt according to any new conditions that arise and to promote sharing and learning as well as to build community knowledge and capacity. This will promote and facilitate cross learning and replication in other areas to promote sustainability and scaling up.

A participatory **monitoring and evaluation system** will be developed to enhance technology transfer, track progress, assess impact and communicate results to enable the project to adapt according to any new conditions that arise. A communication and knowledge management strategy will also be developed and implemented to promote sharing and learning as well as to build community knowledge and capacity. Cross visits between communities will promote the spread of good practice. Activities under this output will include: developing and implementing an M&E system (baseline survey, annual impact assessments, quarterly progress monitoring and reporting, mid term review, final evaluation), developing and implementing a knowledge management and communication strategy (web based information, mass media, leaflets, posters, video diaries), training for field staff, capacity building of cooperatives to collect and analyse data, organising cross visits to promote replication, preparation and dissemination of communication materials.

In Ngeruka Sector (the Project site), some households have fields inside the Project target area but do not live beside their fields. e.g some households are living in Kamabuye Sector when their fields are located in Ngeruka Sector the Project sites. This situation occurred because local Authorities relocated people living in high risk areas to another sector. For this reason some households that are outside the project but appear in the logframe.

Specific activities under Output 4 component include:

1. Developing an M&E system + Staff recruitment
2. Inception workshop and annual workshops
3. Baseline survey
4. Training for field staff
5. Developing and implementing a knowledge management and communication strategy
6. Preparation of web based information, mass media, leaflets, posters, video diaries
7. Capacity building of cooperatives to collect and analyse data
8. Cross visits to promote replication
9. Annual impact assessments
10. Quarterly progress monitoring and reporting
11. Mid term review
12. Final evaluation

**Q 2.4** **How** does the project address cross-cutting issues such as gender and youth?
The interventions will be **gender and age responsive** considering the specific needs of men, women and youth as well as the gendered inequalities that may prevent women from participating in and benefitting from interventions. The project will adopt a household approach working both with men and women from each target households. Several of the interventions (e.g. livestock rearing, water and sanitation services) are targeted specifically toward women and children since they have responsibility for water collection and caring for livestock. Reducing the time spent fetching water will improve school attendance and enable women to have more time for income generating activities such as rabbit and pig rearing. These IGAs will raise household incomes enabling further investment in assets that reduce vulnerability to stresses and shocks including climate change, medical emergencies and health problems.

The promotion of conservation agriculture will increase agricultural productivity and combined with the diversification into livestock and fish cultivation will improve food security and have positive nutritional impacts on the family. In particular, this will benefit children and nursing mothers who are most affected by poor diets.

**Q 2.5 Who** are the stakeholders affected by the problem, and who are the stakeholders influential in solving the problem? How have they been incorporated and involved in project design and delivery?

There has been extensive consultation with key stakeholder groups including target beneficiaries, local authorities and partner organisations during the design phase (described below). The key stakeholders are:

1. The **target households** that will participate in the project will be the main stakeholders. A half-day consultation with people from these households identified the main issues driving poverty in the village and their key priorities on which the project is based. They will lead on project execution supported by project staff. Initially the project will look for enthusiastic people from the target households to participate in the trials to demonstrate the viability of the technology. These pioneer farmers will then promote the uptake of the technology among other target households eventually becoming core trainers in the community. A needs assessment and a series of community meetings have already taken place with target households in all nine of the villages.

2. The **local authorities** (district, sector and cell) will provide technical assistance (agronomist, infrastructure officer, Environment Officer and Forestry Officer) and community development support (IDP Officer and Executive Secretary of the Cell) in terms of helping project staff to engage with and mobilise the community. The District Authority will also be critical as the Steering committee in assisting with the replication of the approach in other sectors by incorporating successful approaches into the DDP and Annual Performance Contract process. An MoU between Bugesera District and AVVAIS is attached to this proposal. Political and operational support from the district will be important for achieving the project deliverables. Officers from all levels from cell through to the Vice Mayor have been extensively involved in the design of the PPD and PD. The proposal was proposed and well received by the JADF and the Project Steering Committee comprising District officers have been heavily involved in the design of the project and in selecting the target areas and households. In addition, a Project Steering Committee meeting was held in August, 2015 with key stakeholders from the District Authority. The district authority highlighted the destruction of the Cyohoha Buffer zone by grazing and firewood collection and the design was modified to include interventions aimed at controlling these activities and restoring the buffer zone so it can perform its ecological function effectively.

3. The **partner organisation** Water and Sanitation Corporation limited (WASAC Ltd) will provide the necessary specialist technical assistance to ensure the watsan interventions are designed and implemented effectively and any infrastructure is constructed according to building guidelines. WASAC Ltd. has visited the sites and has provided detailed costings for the budget.

4. The **wider population** which is affected by the decline in ecosystem services resulting from over-exploitation of natural resources and environmental degradation. Consumers will benefit from the...
increased availability of food products in the markets. Village leaders / opinion leaders will also play a critical role in mobilising support for programme interventions.

5. The **buyers** of the products are key stakeholders as ultimately they will drive the demand. Buyers will be engaged from the early stages of project inception to identify what products can be supplied and what quality assurance measures are necessary to ensure that the product arrives to the buyer in good shape.

**Q 2.6 How will the benefits of the project be sustained after FONERWA funding comes to an end?**

The **participatory approach** will promote local ownership, will only support development activities prioritised by the community and will foster experiential learning among participating farmers. The integrated production system approach is **highly appropriate for poor farming households** as it lowers production costs, spreads risks and generates a year round income for participating households grouped into 9 cooperatives of 436 people each (3927 people in total). This income will continue to be generated beyond the end of the project as the IGA’s are market oriented. As a viable alternative to subsistence farming on depleted soils prone to erosion, it is likely to yield positive impacts (including enhanced household incomes and increased productivity from agriculture and livestock systems) that will attract many farmers to adopt the new technology.

By **connecting the producers to high value markets** in Kigali, AVVAIS can ensure good prices and a continuous demand for the products. As a market driven initiative (i.e. only viable value chains are supported), the process will be sustainable from the very beginning and self-financing by the end of the project.

Project Beneficiaries Representatives and AVVAIS as the implementer in Partnership with the District of Bugesera will play the intermediary role for linking farmers to high value markets after the project ends.

The **holistic approach** which includes agro-forestry and water and sanitation interventions provides an all round solution to the problems found in this village resulting in improved soil conditions, increased food security, reduced malnutrition, increased household incomes and ultimately more secure livelihoods. This will enable households to invest in education, improved housing and other key areas that will reduce poverty and drive development in this village hence reducing the need for external support.

The knowledge management component will promote technology transfer and the secondary adoption of the adaptation approaches beyond the project area extending the reach and sustainability of the project.

**Q 2.7 What is the scope for income generation from the project?**

The main thrust of the project is to enhance household incomes through new income generation activities. Interventions under Output 1 will generate income for 912 households from a variety of climate resilient IGA’s including rabbit, pig, and mushroom production. There is also scope to increase uptake of climate resilient livelihoods and expand the income generation beyond the target area since Output 4 allows for knowledge sharing and promotion of the approach in neighbouring areas.

**Q 2.8 Preparation: Has a feasibility or pre-feasibility study been conducted (If yes, then please attach a copy to this PD)?**

No

**Q 2.9 Preparation: Are there any outstanding regulatory or legal requirements that need to be met before the project can proceed (access to land, planning consent, use of new technologies)?**

No

**Q 2.10 Preparation: Has an Environmental Impact Assessment been conducted for the project (If yes, then please attach a copy to this PD)?**

No, this is not required.
How will the performance of the project be monitored and evaluated (both during and after the project)? Explain the monitoring system below and then fill in the budgeted M&E Plan (in the table below – example activities listed for information purposes only).

A participatory monitoring and evaluation system has been integrated into the design to track progress, assess impact and communicate results to enable the project to adapt according to any new conditions that may arise. The monitoring and evaluation (M&E) system will be based on the logical framework and will link in with the communication and knowledge management system (under Output 4) to promote sharing and learning as well as to build community knowledge and capacity.

The Project Co-ordinator will develop the monitoring and evaluation system and will have overall responsibility for its effective operation. Data will be collected, compiled and analysed on a regular basis by the two Project technicians Workers who will be assisted by the Project Manager.

Reporting will be carried out by the Project Co-ordinator on a quarterly basis. The Project Progress Reports will describe progress on implementation as well as lesson learning, an updated risk assessment and management as well as an ongoing assessment of sustainability and acceptance of programme interventions by the stakeholders particularly the beneficiaries. An expenditure report (with a certified financial statement), workplan and budget for the following reporting period will also be included. In addition, the project will commission an annual audit (to be conducted by an accredited auditor) of project accounts to ensure compliance with Government regulations and procedures. This will ensure continuous monitoring of project activities and allow for corrective measures in due time.

Annually (during the fourth quarter of the year), the Project Manager will prepare an Annual Review Report which will include the results achieved against the pre-defined targets at the output level over the whole year. The Review will assess the performance of the project against the baseline and targets in the project M&E Framework. The assessment will include a field survey and case studies and will report on:

- progress made against the indicators, milestones and targets,
- effectiveness of delivery of programme outputs and efficiency of implementation and risk management,
- achievement of objectives,
- identify corrective actions if needed and
- lessons learned from programme design, implementation and management.

In the last year, this review will be a final assessment and may involve other stakeholders as required. It will focus on the extent to which progress is being made towards outputs, and alignment with appropriate outcomes. The report will summarise the results achieved (objectives, outcomes, outputs), lessons learned, and make recommendations on any actions needed to ensure sustainability, replicability and scaling up.

Monitoring results will be disseminated in a user-friendly format and timely manner to project stakeholders by the Project Manager to enable a responsive approach to implementation and allow for troubleshooting of any problems to ensure smooth implementation of programme activities.

The monitoring and evaluation system will be linked to the M&E framework, annual work plans and budgets. The timely provision of results from Monitoring and Evaluation activities will enable the team to take corrective or enhancing measures as necessary. The project will employ a variety of means for data collection including surveys and participatory methods. The system will use of gender-disaggregated indicators to track the delivery of outcomes in its interventions.

<table>
<thead>
<tr>
<th>M&amp;E Activity</th>
<th>Responsible person</th>
<th>Timeframe</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing an M&amp;E</td>
<td>Consultant</td>
<td>Quarter 1</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Inception workshop</td>
<td>Project Manager</td>
<td>Quarter 1</td>
<td>12,000,000</td>
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<tr>
<td>Baseline survey</td>
<td>Project Manager, Consultant, Community</td>
<td>Quarter 2</td>
<td>2,000,000</td>
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</tbody>
</table>
The monitoring and evaluation system will be participatory so that, as much as possible, the results from project interventions will be measured, processed and evaluated by the target communities. As well as enabling project participants to use the information to modify approaches as they go, this approach will also build the capacity of local communities to adapt to future climate trends and shocks.

The project will train the Community Volunteers to collect, collate, analyse and report data to the target beneficiaries who will also be engaged in the process. This will develop the capacity of participating households to collect and evaluate information themselves and modify their management practices accordingly. Because resources have been specifically dedicated to monitoring and evaluation as well as to knowledge management under output 4, there is also provision to share lessons learned more widely to other stakeholders including local government, key actors in the value chains, policy makers and researchers working in this area.

Q 2.13 Which Output from the FONERWA’s overarching M&E framework will be contributed to in the project’s M&E Framework (if possible choose an indicator from FONERWA’s M&E framework)?

The project will contribute to Output 1 of the FONERWA Mand E Framework: conservation and management of natural resources strengthened and sustained. The project will contribute to a number of FONERWA output indicators:

- output indicator 1.2 - “Quantity of soil annual increase in land secured against erosion”
- output indicator 1.4 - “Increase in forest and agro- forest coverage as a percentage of total surface land area”
- output indicator 3.3 – “total no’ of green jobs created: disaggregated by a).gender, b).youth, c).< 6 months, d).> 6 months”
- output 3.1 – “ Number of HH accessing water harvesting techniques and safe drinking water”

Q 2.14 Duplication of project with other funding sources - all relevant potentially overlapping projects need to be identified and the areas of overlap and complementarity identified, drawing lessons and establishing a framework for coordination during implementation. Please provide a summary of recently concluded, ongoing, and pipeline projects that are relevant to the proposed project in the table below.

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Timing and geographical coverage</th>
<th>Potential duplication and synergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Protection of Cyohoha lake watershed in Ngeruka Sector, Murama Cell” (2012 - 2013)</td>
<td>The Project promoted edible mushrooms production techniques in Rwabisheshe village and other agricultural activities in order to reduce the soil erosion into South Cyohoha Lake. The Project activities included planting trees in the buffer zone around South Cyohoha Lake</td>
<td>1 year (2012 - 2013) in 1 village (Rwabisheshe in Ngeruka Sector)</td>
<td>The project design incorporates the experience and lessons learned during this project. The project will also benefit from the previous</td>
</tr>
<tr>
<td><strong>Bugesera District Households Water and Sanitation Programme (WASAC)</strong></td>
<td><strong>Investment in Mushroom Production Facilities.</strong></td>
<td><strong>All Bugesera Sectors</strong></td>
<td><strong>Project Interventions will be coordinated with this project through the JADF.</strong></td>
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<tr>
<td><strong>Integrated Rural Development Project Bugesera</strong></td>
<td><strong>Improved Drinking Water Sources:</strong> Springs, public standpipes, water piped into dwelling/yard, boreholes, protected wells and rainwater collection (EICV3)</td>
<td><strong>Area around Lake Cyohoha</strong></td>
<td><strong>The project will draw lessons from this project.</strong></td>
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<tr>
<td><strong>Protection of Lakes Rweru and Cyohoha against Silting (erosion control on 10,000 Ha and stocking the lakes). Irrigation of land by pumping water from the lakes (500Ha on Lake Cyohoha). Development of 1500 ha of the Gashora marshland through irrigation and drainage, extension of the anti-flood dam over a distance of 2 km for rice production. Rehabilitation of the water treatment plant and extension of the supply system. Installation of 1000 rainwater harvesting tanks. Support for seed multiplication, selection of appropriate varieties, supply mosaic-resistant cassava cuttings. Provision of goats and cows, fodder production and IGA support.</strong></td>
<td><strong>The project will review the completion report and draw lessons prior to project implementation.</strong></td>
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<tr>
<td><strong>PADAB Projet d'Appui au Développement Agricole de Bugesera (PADAB)</strong></td>
<td><strong>The project aimed to increase agricultural production in the Bugesera Region and strengthen food security with 2 outputs:</strong></td>
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<td></td>
<td>- Increase agricultural production</td>
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<tr>
<td></td>
<td>- Irrigation of crops: Improvement of soil fertility and protection of catchments</td>
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<td><strong>Targeted 13,500 households in Bugesera</strong></td>
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<td></td>
<td><strong>Funding:</strong> USD 18,731,050 from the African Development Bank.</td>
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<tr>
<td><strong>2006 – 2012 Rurambi Valley (Nyabarongo downstream ± 1000 ha)</strong></td>
<td><strong>The project will review the completion report and draw lessons prior to project implementation.</strong></td>
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<tr>
<td><strong>Plan International Organisation: Bugesera Unit</strong></td>
<td><strong>To support the rights of children through rights based programming and advocacy.</strong></td>
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<td></td>
<td><strong>Works to:</strong></td>
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<td></td>
<td>- ensure girls receive multi-faceted support to encourage their performance both at primary and secondary school</td>
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<td>- support families and communities to ensure children aged 0-6 survive and thrive in life</td>
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<td></td>
<td>- support livelihood interventions for youths through life skills education, training and economic empowerment.</td>
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<td></td>
<td>- promote children's participation at all levels</td>
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<tr>
<td><strong>Ongoing since 2007</strong></td>
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<tr>
<td><strong>Project Site:</strong> Bugesera / Nyamata</td>
<td><strong>The project does not have a thematic overlap with these activities so there is no risk of duplication.</strong></td>
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<tr>
<td>PAIGELAC (Projet d’appui à l’aménagement intégré et à la gestion des lacs intérieurs)</td>
<td>African Development Bank and the Government Of Rwanda</td>
<td>2006 - 31st Dec 2012 Country wide programme including Bugesera District</td>
<td>The project will review the completion report and draw lessons prior to project implementation.</td>
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<td></td>
<td>Budget: USD 16.80 Million Objective: to contribute to the strengthening of food security by increasing the incomes of actors in the fishery sub sector in a sustainable manner.</td>
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<td>• 15 inland lakes with a total surface area of 15,380 ha have been restocked with 381,113 of Tilapia niloticus fingerlings.</td>
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<td>• 513ha and 4956ha of radical and progressive terraces respectively and 1,624 ha of forest cover have been established on the watershed of the 17 inland lakes</td>
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<td>• We have assisted 247 cooperatives to rehabilitate 180 ha of fish ponds and stocked them with Tilapia Niloticus fingerlings In order to promote fish commercialisation and reduction of post harvest losses ;</td>
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<td>• 27 landing sites, 2 regional fishery products promotion centres and one Urban fishery promotion centre in the Kigali Economic Zone have been constructed.</td>
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<td>• Assisted farmers in the establishment of 400 cages for Tilapia intensive farming on lakes Bulera, Ruhondo and Muhazi</td>
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<td></td>
<td>• Rehabilitation of Kigembe into a modern fish hatchery with a capacity of producing at least 10 million fingerlings per year.</td>
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</table>

**Q 2.15 **Lesson Learning: Please explain how the learning from this project will be disseminated and shared during (and at the end) of the project, and to whom this information will target (e.g. Project stakeholders and others outside the project)**

The proposed project specifically focuses on sharing project results and lessons learned through Output 4. A communication and knowledge management strategy will be developed and implemented to promote sharing and learning as well as to build community knowledge and capacity. Results and lessons learned from the programme will be periodically disseminated within and beyond the Project intervention zone using a variety of media (briefing notes, website as well as through existing information sharing networks and forums).

The lessons will be disseminated through farmer-to-farmer fora (cross visits, community meetings etc.), participatory videos made by farmers to showcase local experiences, techniques and achievements, and directly transmit messages to decision makers and donors, project reports and briefing notes, web based information, as well as mass media outlets (newspapers, radio etc.) to promote a wider understanding of the
issues and the secondary uptake of successful approaches.

A lesson learning exercise will also be included annually and at project completion. During this process significant new understandings will be compiled to build the knowledge base of best practices as well as document where project implementation has resulted in unexpected impacts or investigate approaches that have not worked and why. Lessons learned will include detailed, specific information about behaviours, attitudes, approaches, that will inform project implementation and other interventions and will inform project reports.

Q 2.16 **Risk Management:** Please outline the main risks to the successful delivery of this project indicating whether they are high, medium or low. If the risks are outside your direct control, how will the project be designed to address them?

<table>
<thead>
<tr>
<th>Risk description</th>
<th>Category (political, operational, financial, environmental)</th>
<th>Risk level (low, medium high)</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to create ownership of the project at the local level.</td>
<td>Political</td>
<td>Medium</td>
<td>Project design team have already involved the key stakeholders in problem identification and project design. The project will also ensure that they are involved in throughout the project cycle to create ownership at the community level and build in sustainability to project interventions. Use of volunteers from the community supported by two field based project staff will also build ownership.</td>
</tr>
<tr>
<td>Lack of capacity and commitment to project outcomes and resistance to adopting the proposed measures. In particular, there may be a lack of incentives for local communities to participate and cooperate in interventions that do not yield immediate financial value or reduce incomes in the short term, but aim at longer-term resilience. This may reduce stakeholder engagement and participation.</td>
<td>Operational and political</td>
<td>Medium</td>
<td>Planning IGA’s and conservation agriculture will be decided through democratic community structures with technical advice from project staff. The project will only support interventions that have community backing and will raise awareness of the long term benefits of integrated IGA’s and conservation agriculture and advocate where necessary with stakeholders who may be resistant to agreed measures. The project incorporates activities that yield immediate benefits for communities in terms of skill development and income generation. The project will build awareness of these benefits during the inception phase.</td>
</tr>
<tr>
<td>Issue</td>
<td>Sector</td>
<td>Level</td>
<td>Solution</td>
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<tr>
<td>----------------------------------------------------------------------</td>
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<tr>
<td>Low awareness and acceptance of the need to conserve fragile ecosystems among key practitioners that would limit the support for conservation agriculture.</td>
<td>Environmental</td>
<td>Medium</td>
<td>Project will undertake detailed stakeholder consultation and awareness raising during implementation and develop an effective advocacy strategy to win over influential stakeholders.</td>
</tr>
<tr>
<td>Conflicting interests among stakeholders with respect to land use and access to and use of natural resources hampers erosion control and IGA’s.</td>
<td>Political</td>
<td>Medium</td>
<td>Project will raise awareness and build consensus around conservation agriculture and climate resilient livelihoods through a carefully designed and paced community mobilisation planning process. The project will introduce measures to promote dialogue and build trust among stakeholders.</td>
</tr>
<tr>
<td>Resistance to adoption of new livelihood for participating households which could undermine the effectiveness of livelihood interventions and reduce the potential off-farm livelihoods impacting on households incomes. Religious belief systems (e.g. 7th day Adventism, Islam etc.) may preclude certain income generating activities such as raising and eating rabbits, pigs or ducks.</td>
<td>Political</td>
<td>Medium</td>
<td>Project will sensitise the target households to the benefits of new livelihood strategies. Project will take religious belief systems into account when promoting livelihood options and ensure a variety of options are available.</td>
</tr>
<tr>
<td>Continued unplanned grazing and unsustainable farming practices hinder progress.</td>
<td>Environmental</td>
<td>High</td>
<td>Project will build awareness of Government zero grazing policy and stake out the target area to keep out livestock. Project will build awareness of the effects of unsustainable farming practices and will introduce advocacy measures to promote the adoption of conservation agriculture.</td>
</tr>
</tbody>
</table>
Price fluctuations for supply chain inputs (materials, feeds etc.) and products (mushrooms, fish etc.) which could a) undermine profits and confidence in the project b) affect the costs of implementation and lead to budgetary constraints.

<table>
<thead>
<tr>
<th>Risk</th>
<th>Risk level (low, medium high)</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price fluctuations</td>
<td>Financial Medium</td>
<td>Project will establish a financial risk management strategy and regularly monitor prices. It will also take account of fluctuations in its support functions for enterprise development and offer an array of IGA choices to hedge against price fluctuations. The project will also minimise the impact of price fluctuations for inputs by using homemade inputs such as feeds.</td>
</tr>
<tr>
<td>Delays in the disbursement of funds, procurement and Institutional inefficiencies (lengthy approval processes etc.) delay the resulting in delayed recruitment of project staff and hence project implementation.</td>
<td>Financial Low</td>
<td>The project will work closely with FONERWA to ensure optimum conditions for timely disbursement of funds. The PM will be supported by a competent Finance and Admin Officer who will ensure effective mobilisation of funds, contracting, monitoring, and financial reporting.</td>
</tr>
<tr>
<td>Extreme weather events could hamper project interventions (planting etc.) and undermine confidence of local communities in</td>
<td>Environmental Medium</td>
<td>The project will build in flexibility in terms of resource disbursement and management to enable communities to bring forward project interventions if</td>
</tr>
<tr>
<td>Cultural views of women may impede their ability to take up some of the identified livelihood opportunities.</td>
<td>Political Low</td>
<td>Project will create awareness and advocate for equal opportunities in IGA development.</td>
</tr>
<tr>
<td>Failure to maintain Agroforestry trees plantations compared to fruits trees by Project households beneficiaries</td>
<td>Environmental Medium</td>
<td>Project will create ecosystem awareness in lands and natural resources management base on trees characteristics and advantages.</td>
</tr>
</tbody>
</table>

Q 2.17 **Risk Management**: What specific risks, if any, does your project pose to the environment, people or institutions affected by the project and how will these be managed and mitigated?

<table>
<thead>
<tr>
<th>Risk</th>
<th>Risk level (low, medium high)</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock activities deplete natural resources</td>
<td>Low</td>
<td>Project will promote best practice in husbandry, (zero grazing etc) in line with GoR policies and laws.</td>
</tr>
</tbody>
</table>

The project does not pose any major threats to the environment, people or institutions affected by the
Two risks have been identified and mitigated against in the design (above).

SECTION 3: PROJECT BUDGET AND VALUE FOR MONEY

Q 3.1 What is the total cost of the project (RWF; provide total cost for each year of the project disaggregated by capital and recurrent expenditure)?

<table>
<thead>
<tr>
<th>Year</th>
<th>Capital</th>
<th>Recurrent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>125,412,700</td>
<td>104,475,936</td>
<td>229,888,636</td>
</tr>
<tr>
<td>Year 2</td>
<td>26,698,600</td>
<td>96,232,536</td>
<td>122,931,136</td>
</tr>
<tr>
<td>Year 3</td>
<td>6,000,000</td>
<td>101,900,035</td>
<td>107,900,035</td>
</tr>
<tr>
<td>Total</td>
<td>158,111,300</td>
<td>302,608,508</td>
<td>460,719,807</td>
</tr>
</tbody>
</table>

Q 3.2 What is the total amount requested from FONERWA (RWF; provide financing needs for each year of the project)?

RWF 460,719,807 is sought from FONERWA over three years.
Year 1 Rwf 229,888,636
Year 2 Rwf 122,931,136
Year 3 Rwf 107,900,035

Q 3.3 List all other sources of funding. Note whether the status of other funding sources (i.e. Whether the money has been approved or is awaiting authorisation)

There are no other sources of funding for this project.

AVVAIS NGO as the Project implementer will contribute with 8% of the total budget as followed:
- Office Internet Connection for 3 years with Rwf 4,018,007
- Office Rent for 3 years with Rwf 19,800,000
- Office Security Guards for 3 years with Rwf 12,636,000

Q 3.4 Additionality: Explain why the project cannot be fully financed by other sources than FONERWA?

Although this project aligns with Government priorities both nationally and at the local level, there is a lack of Government funding to implement these activities.

Q 3.5 What non-financial support is needed to implement the project? What is the best way for FONERWA to deliver this support?

Periodic review, advice and technical assistance on FONERWA’s M&E requirements during implementation.

Q 3.6 Value for Money (Economy):

i) Briefly describe how the required inputs have been identified and how the GoR procurement procedures will be used to ensure they are obtained cost effectively

ii) Provide identified unit cost measures for selected project outputs? (Please see VfM guidelines on how to determine these. Further guidance from the FONERWA Secretariat is available)

The project will provide direct benefits to 912 poor households for a cost of RWF 460,719,807 and indirect benefits to the local population through the secondary uptake of technology (promoted through Output 4), improved soil conditions resulting from agro-forestry and the savings made through having less people engaged in VUP and other social protection programmes.

All project inputs will be sourced locally and the project will adhere to stringent procurement and financial management procedures to ensure that inputs are procured and utilised efficiently. In summary, the procurement process will be proceeded as follows:

1. Preparation of Procurement Planning including the preparation of the Annual Procurement Plan indicating the objectives to be achieved in accordance with procurement regulations, this ensures effective budget allocation and respects regulations governing budget execution;
2. Procurement opportunities and a summary of evaluation results will be published on a website called
the “dg market”. According to Rwandan law, the open advertisement will respect the duration of 30
calendar days for local tenders and 45-90 days for international tenders as indicated in the law
No12/2007 on Public Procurement (art.29 and 47) (counted from the date of publication);
3. Publication of procurement plans on dg market website;
4. Preparation of bidding document which describes the place and date for submitting and opening of
bids, number of copies to submit, and any document evidencing the bidder’s qualifications;
5. Publish and Distribution of tender notice including the formal announcement and newspaper
publication;
6. Reception, record and safe keeping of bids, bidders may submit their bids in one of the official
languages (Kinyarwanda, French and English) and the Contract will be prepared in the same language
used during bid preparation;
7. Opening, Evaluation of Bids and Recommendation of tender award including a brief report on the bid
evaluation comprising the evaluation process, etc.;
8. Provisional Notification to successful and unsuccessful bidders;
9. Final Notification to successful and unsuccessful bidders;
10. Preparation and signing of Contract: comprising the preparation of the schedule and the execution of
the contract according to Rwanda Law in application.
11. Contract management with regular verification of contract implementation, if the tender is not
implemented according to the terms agreed in the contract, the AVVAIS will react in appropriate time
applying payment and penalties as per the contract terms;
12. Final report on delivery/execution of services, including submission of a detailed monthly report to
RPPA by 15th of the month following the reporting month.

Existing infrastructure (AVVAIS mushroom laboratory and grow out structures) and AVVAIS expertise
(technicians and the Project Manager), equipment and a vehicle will be available to the project reducing the
need for start up investment and training in this area. Conservation agriculture is cost effective for erosion
control compared with other measures such as terracing (radical terraces cost around US$3,492 per hectare
compared to less than US$80 per ha for conservation agriculture). The recycling of waste products in the
integrated production systems will also reduce input costs while also enhancing productivity. Using local
labour and developing the skills of the local community will also demonstrate Vfm.

The project will not only ensure skills are transferred into the community for promoting strong ownership,
the approach will also provide additional human resources to the project for relatively little outlay (cattle,
agriculture seeds supply, etc. will be provided to the volunteer in each village). The project will also use the
Umuganda process (mandatory monthly community works for the Rwandan population) for tree planting
and other labour activities. Unit costs are provided below for 3 inputs based on output indicators from the
M&E framework (Output 4); Output 3: Improving water harvesting techniques and safe drinking water and
sanitation facilities and hygienic practices adopted and Output 2: Promotion of conservation agriculture
(agroforestry, fodder crops etc) as followed:

<table>
<thead>
<tr>
<th>Output Indicator 1.1</th>
<th>Number of target HH with a new source of income of Rwf 191,635.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Indicator 2.2</td>
<td>Number of tree nurseries established with a cost of Rwf 572,000 per nursery.</td>
</tr>
<tr>
<td>Output Indicator 3.1</td>
<td>Number of HH accessing rainwater harvesting techniques and safe drinking water with 912 households</td>
</tr>
</tbody>
</table>
The Project is targeting 912 households beneficiaries accessing rainwater harvesting techniques and safe drinking water.

**Q 3.7 Value for Money (Efficiency):**

1. Briefly explain how the provision and operation of project inputs produce the expected outputs
2. What is the Net Present Value (NPV) and benefit cost ratio for this project (Please see VfM guidelines on how to determine these measures. Further guidance from the FONERWA Secretariat is available)?

One of the main inputs required to deliver project outputs is staff and consultancy time. The significant investment of project resources in staff including two field based technicians as well as a full time Project Manager means that the project can provide intense capacity building within the nine communities reaching more than 4000 people over three years. Consultancy inputs are also included to bring external expertise into the project on a temporary basis for specialised inputs such as the value chain analysis, project evaluations and knowledge management planning.

Around USD $59,324 (10% of the budget) has been allocated to preparing 2000 hectares of land for conservation agriculture (composting, fertilising and staking the area to prevent livestock from grazing) and nursery construction for agro-forestry. Farmer field trials account for 5% of the budget and enable lead farmers to trial the new approaches as well build support for new practices and technology among the community. Support for the adoption of climate resilient livelihoods accounts for around 9% of the budget and enables vulnerable households to transition into new livelihoods that require little land and labour reducing their dependence on cultivated crops. Inputs will include the supply of livestock assets, pig pens, hutches, fingerling, ducks, rabbits, fish cages, feed, equipment as well as training through farmer field schools etc.

14% of the budget is dedicated to participatory M&E functions, lesson learning and promoting the secondary uptake of climate resilient agriculture and off-farm livelihoods in neighbouring areas to maximise the extend the positive impact of the project beyond the target area. Inputs include: cross visits, capacity building of cooperatives to track their own progress, inception and annual workshops, as well as M&E activities (baseline survey, mid term and final evaluations) and knowledge management activities (developing a strategy and communication materials).

A Cost Benefit Analysis (CBA) is attached with the budget and includes assumptions and sources of values used. A timeframe of 10 years was used in the CBA to calculate a NPV of 938 471 313 and a BCR of 3. The milestones from M&E framework were used to assign timings to the values of benefits generated (see CBA attached with M&E Framework, workplan and budget). The project will also generate benefits which have not been valued and included in the NPV and BCA. These include the following non-costed benefits:

1. plantation of trees in lake buffer zone will minimise encroachment and pollution of the lake;
2. the adoption of climate resilient livelihood will increase household income and reduce vulnerability to climatic and other types of shocks and stresses;
3. agroforestry and conservation agriculture will increase the organic matter in the soil so that reduce the use of chemical fertilisers reducing pollution and farming costs;
4. the planted trees will contribute to carbon sequestration;
5. reduced time spent fetching water can be used for more productive activities and increase school attendance;
6. reduced incidence of water-borne diseases due to improved hygiene and access to a clean water supply;
7. skill development among target households will enhance their capabilities creating potential for further income generation;
8. increased food security and nutritional status due to increased availability of a diverse range of food products;
9. Increased ecosystem resilience to climate change due to reduced water requirement for agriculture, reduced erosion, and enhanced biodiversity.

Q 3.8 Value for Money (Effectiveness):

How does your project demonstrate effectiveness:
- How will it show the outputs meet the project objectives?
- Which indicators will you measure to demonstrate effectiveness?

The project will use the following outcome indicators from the project’s M&E framework to measure the effectiveness of its interventions:

- No. of women/men from households adopting climate resilient livelihoods.
- Area of cultivated land (ha) under conservation agriculture.

By setting realistic and achievable targets for these two indicators will enable the project monitoring to track progress towards the project goal which is to support climate resilient livelihoods, enhance household incomes and promote sustainable land use. This will enable the vulnerable communities living in the target area to address the key problems which currently affect them, namely food shortages resulting from a high dependence on over-exploited, rain-fed agriculture carried out on small-holder plots of land in drought affected areas.

Comprehensive value chain analysis, risk assessment and farmer field trials will identify the most viable and climate resilient technologies before production trials begin and only viable production technologies will be rolled out to participating households. In addition, effectiveness will be maximised by intensive community mobilisation, engagement and participation of target households.

The term value chain refers to the full range of activities that are required to bring a product (or a service) from the conception through the different phases of production to delivery to final consumers and disposal after use (Kaplinsky1999; Kaplinsky and Morris 2001). But this Project Value chain will took in consideration only 2 aspects concerning the Production and Sales/Marketing of products to buyers as raw materials in terms of Pilot Project for the 1st Phase. Products Markets survey has been done in Bugesera and Kigali concerning potential customers and buyers’ satisfaction including the Survey findings.

The project will make a significant contribution to poverty reduction since it directly targets some of the poorest areas in Bugesera district. Moreover, a major portion of project resources will be allocated to developing the skills base of target households so that they are more resilient climate change impacts and can graduate from extreme poverty.

ATTACH ANNEXES HERE TO THE PD APPLICATION—these can be accepted as separate files but clearly organise and identify the annexes so they are easy to refer to.
List of Annexes:

1. PD document
2. Budget; CBA; Logframe; Summary; Workplan