Ministry of Foreign Affairs

Activity: SAFAL for Integrated Water Resources (22-0000006)

Id	22-0000006
Date	20-05-2026
SAP application number	4000005937

Contents

Key data **4**

Activity basics 4

Activity details 4

Accounting data 4

Policy data **5**

Beneficiary location **6**

Policy Appraisal **7**

Policy relevance 7

Rationale 7

Contextual analysis 10

Added value 11

Lessons learned 11

Problem analysis 13

Gender 14

Climate change 15

Cooperation, harmonisation and alignment 15

Digitalisation 16

Additional remarks (if applicable) 16

Results **17**

Water 17

Food and Nutrition Security 19

Monitoring and evaluation **21**

Monitoring 21

Evaluation 21

Finance **23**

Budget breakdown 23

Earmarking 24

Prepayments 24

Available resources 25

Grant with a repayment obligation, loans, equity investment or guarantee 25

Audit opinions 25

Key data

Activity basics

Type	Standard
Short name	SAFAL for Integrated Water Resources
Contract party	Solidaridad Network Asia Limited Mong Kok Kln (30022138)
ODA	Yes
Amount EUR	6999970
Start date	01-10-2022
End date	30-09-2026
Full name	SAFAL for Integrated Water Resource Management project
Summary	The project is on community-based water management for enhancing water use efficiency in agriculture to contribute towards a systemic change in the operationalization of IWRM in Southwest Bangladesh. It will promote community-based sustainable use, protection and restoration of watersheds for resilient agriculture. It targets to deliver 03 inter-related outcomes: 1) improved water and soil efficiency, 2) sustainable harnessing of ground and surface water, and 3) improved local governance of water for agriculture at the micro-water shed level. The project defined 03 pathways to achieve the results related to water resource management, climate change adaptation and agricultural productivity: 1) water-efficient, climate-smart and regenerative agriculture production systems; 2) watershed protection; and 3) Micro-watershed management and governance by local communities. It proposes to implement the project in 80 clusters in 05 districts, reach 90000 farming HH, cover 0.5 ml people.

Activity details

Date of receipt of proposal	09-05-2022
Proposal's reference number	
Budget holder	Ambassade Dhaka (8241DHA)
Limit access	No
Related activity	Blue Gold, CDRSSWRMP, South-West, SAFAL

Accounting data

SAP application number	4000005937
Funds center	DHA BD Integ water managem contribution (1702U02030003)

Policy data

Cooperation modality	Project support
Technical assistance	Not applicable
CRS code	31140 Agricultural water resources
Policy Keywords	
Policy Markers	
Climate change: adaptation	Principal
Equality between men & women	Significant
Good Governance / participation	Principal
Private sector development	Significant
Human rights	Significant
Explain your choices	

Beneficiary location

Beneficiary location	Country
Country	Bangladesh
Location type	
Specific location	

Policy Appraisal

Policy relevance

- What policy objectives, as set out in the annual plan, policy notes etc., will this activity contribute to?

Relevance to Bangladesh policies

The impact of the project will be sustainable use, protection and restoration of Watersheds for resilient agriculture in Southwest Bangladesh. These objectives are in accordance with policy documents (1) BDP2100, directly contributes to the identified project no 45 on Southern Agricultural Improvement project (SAIP), (2) Bangladesh Eighth Five Year Plan, FY2020-FY2025, referring priority project CZ 12.8 (3) Bangladesh Perspective Plan 2021-2041, (4) National Food and Nutrition Security Policy (NFNSP) 2020-2030, (5) National Women Development Policy 2011 and (6) Bangladesh Water Act 2013. The establishment and strengthening of Water Management Clusters and groups specifically adheres to the Participatory Water Management Rules (enacted in 2014).

The Project contributes directly to a.o. the following BDP2100 priority investments: CC12.37 (integrated agricultural development in moderately cyclone affected areas), CC1.43 (revitalization of khals), CC1.45 (sustainable development, management and governance of groundwater), CZ12.8 (southern agriculture improvement Project), and others.

The Project links to several core themes under the Bangladesh Perspective Plan 2021-2041 plan: number 2: “GDP growth acceleration, employment generation, and rapid poverty reduction with a broad-based strategy of inclusiveness”, number 3: “to create sustainable development pathways resilient to disaster and climate change”, number 5: “development and improvement of critical institutions”, and number 6: “attaining SDG targets and coping up the impact of LDC graduation”.

Finally, the Project’s activities under outcome 1 (Ensure water-efficient, climate-smart and regenerative agriculture production systems (that generates higher income, improves soil quality and ecosystem service provision for saline tolerant and climate-resilient seed varieties and technologies to promote a sustainable and resilient agriculture production system)) resonate with numerous objectives under NFNSP 2020-2030s, e.g. objective 1.1.: “Increase productivity while ensuring sustainable production of cereals and nutritious food including horticulture, fisheries and livestock”, and objective 2.2.: “Improve marketing systems”.

Relevance to Netherlands Policies

This Small Scale IWRM project is relevant for the Netherlands profile in Bangladesh, and a very good example of the ‘integrated water-agri-climate approach’ advocated for by the BDP2100. This is also in line with DHA’s MACS 2019-2022 as well as its Annual Plan for Bangladesh 2022, where the focus is on strengthened climate resilient water security, as well as continued integration of climate and agriculture in the water management ODA program. Furthermore, this activity relates to other (ongoing) DHA activities such as aquaculture, participatory water management and various innovations. Participatory water management in particular has been a key-component of DHA’s water portfolio in the past decade and is applied in various BWDB-led activities (South-West Integration, CDSP and the recently completed Blue Gold project) as well as LGED led newly agreed CDRSSWRM project. This project continues to build further on experiences gained, and provides an opportunity to compare and capture lessons from different approaches, allowing the BWDB (under Ministry of Water Resources) and LGED (under Ministry of Local Government) to fine-tune and mainstream their approaches. Since the delegated FNS budget will be phased out in 2022, agriculture activities linking to IWRM are increasingly vital to maintaining the status of ‘signature cooperation in the BD-NL relations’. While NL is consolidating its footprint and successes over the past experiences, this project has the potential to brand NL in Bangladesh as a strong partner in participatory water, agriculture and climate management. In turn, this can boost diplomatic leverage of the Netherlands to advocate successfully with Bangladesh on its climate policies, ensuring ambitious, realistic, inclusive and long-term mitigation and adaptation plans.

On the other hand, DHA’s complementarity to different integrating water management projects potentially provides a platform for the Dutch organization Solidaridad to show their expertise and additional value, putting those in a good position for future projects/tenders. Moreover, referring the ‘Beleidsnota Investeren in Perspectief (mei 2018)’ and the Memorie van Toelichting (Tweede Kamer, vergaderjaar 2021–2022, 35 925 XVII, nr. 1) the objectives of the Project contribute directly to the achievement of:

- The SDGs in general, and specifically SDG 6 (water), SDG 1 (end poverty), SDG 13 (climate action), SDG 2 (zero hunger), SDG 5 (gender equality), SDG 9 (innovation & infrastructure), SDG 8 (decent work and economic growth) SDG 12 (Responsible Consumption and Production) and SDG 17 (Global Partnership);
- The BHOS goals and related IGG’s results framework on Water (specifically ‘Verbeterd stroomgebied beheer en veilige delta’s’), FNS, WRGE and PSD. Please refer Results section of this IMPACT for a detailed description of project indicators.

Rationale

- What issue/problem will be addressed by the activity

- Why does the activity help to address the issue/problem?
  For ODA activities over EUR 250.000, please explain the Theory of Change

Bangladesh faces significant geographic challenges due to its low-lying deltaic location and the lack of control over the flows of the 57 transboundary rivers that drain its national territory to the Bay of Bengal. A large portion of its population of 167.6 million (in 2020) is vulnerable to climate impacts, including rising temperatures, which sometimes lead to severe effects on livelihoods and food security. The poor are most affected as they live in greater density in poorly constructed housing on lands prone to hazards.

About 62% of the population live in rural areas, where people are mainly engaged in agriculture and related nonfarm activities. The sector, however, faces several issues related to climate change (salinity, changing rainfall), degradation of natural resources (especially groundwater levels), diversion of agricultural land (to non-agricultural use), and low productivity, and the effectiveness of extension services. Produce is sold to traders and rural/traditional markets. These market facilities are poor, lacking storage, processing and packing, and cold storage. Food chains, though increasingly integrated, remain inefficient.

Next to agriculture, many farmers are also engaged in a form of aquaculture. Fisheries contribute 3.5% to the national GDP and 25.7% to agricultural GDP, and more than 10% of the population of Bangladesh are directly or indirectly engaged in fisheries. However, inland capture fisheries production has declined since 2009 due to habitat degradation (chemical pollution of waterways), overfishing, reduction in biodiversity and lack of good fisheries management. While about 20% of rural households have a homestead pond, most are poorly managed. Regarding aquaculture, key issues include: low quality and insufficient seed and feed, poor extension services, high capital requirements, and diseases.

Increased salinity and land degradation

A World Bank study highlights that by 2050, there will be a severe increase in salinity intrusion in water bodies and soil, leading to a shortage of fresh water. Salinity is affected by tidal flooding during the wet season, direct inundation by storm surges, and movement of saline groundwater during the dry season. It estimates that Khulna, Satkhira, Bagerhat and Barisal will be severely affected, among other districts. Further, the study shows an estimated median of 26% increase in the soil salinity by 2050, with an increase of 55% in most affected districts. The impact of such heightened levels of salinity intrusion limits people's access to freshwater bodies in turn reducing agricultural productivity. As the yield of crop production had been reduced due to salinity, the cost of production had gradually increased. Increased soil and groundwater salinity may also pose significant threats to livelihoods and public health through their impacts on infrastructure, agriculture, aquaculture, coastal ecosystems, and freshwater availability for household and commercial use.

Flooding and waterlogging

Riverbed siltation and backwater effect due to sea-level rise and high tide led to prolonged water-logging in southwest Bangladesh in the last two to three decades. Waterlogging is a result of a combination of factors that include: excessive monsoon rains; inadequate drainage; mismanagement and a lack of maintenance of embankments; increased sediment and siltation of rivers; the restricted river flows due to embankments built for shrimp farming, and the release of water from barrages in India. Flooding and waterlogging are washing away the crops and soil and can pollute the groundwater with chemicals and sewage, which damages crops. It is causing increased crop disease because the air spaces in the soil are filled with water, substantially reducing the oxygen in the soil. Most healthy roots need air (aeration) for development. The impacts affect the very basis of livelihoods and make communities vulnerable to a vicious cycle of losses, lack of capacity and poverty. Scientific studies in Southwest Bangladesh have shown that many households experienced shocks during and after waterlogging, including illness (both mental and physical), crop failure, food shortages, and loss of income and livelihoods. Further, an increasing level of debt taken on as a coping mechanism made the vulnerability of floods and waterlogging affected households even worse.

Unsustainable agriculture

Although considerable efforts have been made in the past decade, structural inequities and unsustainable practices are still prevalent in governing and managing water in agriculture. Competition over natural resources – like water and land – and perverse economic incentives have increased the wealth gap, encouraged unsustainable exploitation of nature and increased pollution and the waste of natural resources in Southwest Bangladesh. This ongoing 'race to the bottom is considered a significant anthropogenic cause of climate change. Smallholders in the Southwestern coastal zone are incurring economic losses due to poor knowledge of adaptive technologies and access to quality farming inputs and farm produce sales.

It is a deadly cycle where the water stress and land degradation exuberate poverty on one hand, and efforts of the smallholder farmers to cope with poverty lead to unsustainable agricultural practices on the other. The farmers are often caught in a downward spiral, whereby they are forced to deplete freshwater resources to survive, and this degradation of the environment further impoverishes people. Lack of adequate training and low capacities of organisation working in the sector leaves out many farmers from exposure to modern climate-smart methods of agriculture.

Lack of essential capacity and skills

Most of the farmers in southwest Bangladesh lack the knowledge and skills to adopt climate-smart, innovative, efficient and diversified farming models. This, in turn, prevents their ability to increase income for themselves and their workers, generate jobs, and ensure the resilience of their natural environments are more resilient. Unfortunately, the access to resources and education needed to ensure decent livelihoods are not equal among population groups. In particular, women and youth are among those who often do not benefit from this access. Notably, the limited knowledge and skills among the women and youth coupled with restrictive norms that actively limit their participation in skills-building and networks deter their participation in economic

capacity building activities. Opportunities for women to obtain knowledge and skills later on in life are especially limited due to culturally restrictive norms that force them to focus on their family and household responsibilities. Specifically, women's limited literacy, including in technical aspects of water-efficient farming, prevents them from being able to manage and grow their farms and income.

Access to affordable technology

Smart technologies for smallholder farmers are critical for large scale adaption of sustainable water use and climate-resilient agriculture. The lack of access to (smart) phones, access to communication networks, and literacy are key barriers, particularly for women to benefit from the opportunities IT tools. Increasing digital efforts across the agriculture ecosystem is one of the key ingredients necessary to transform agriculture in Southwest Bangladesh. Apart from that, inputs from satellite imageries, soil testing kits, mobile-based early warning systems for flood and waterlogging, water meters, saline tolerant seeds and cropping technologies are critical requirements for sustainable water- efficient agriculture in the coastal areas of Bangladesh. Much of these technologies are absent or extremely expensive or impractical in Bangladesh.

Poor Irrigation practices

The primary cause of man-made salinisation is the salt brought in with irrigation water. All irrigation water derived from rivers or groundwater, however 'sweet', contains salts that remain behind in the soil after the water has evaporated. Over the years, surface water and ground water irrigation has increased in Southwest Bangladesh to increase the number of crops.

Inefficient irrigation is changing the natural water balance of irrigated lands. Large quantities of water in irrigation projects are not consumed by plants and must go somewhere. It is impossible to achieve 100% irrigation efficiency in irrigation projects where the plants consume all the irrigation water. Around 40% of water is not evaporated and is stored underground. Many aquifers cannot absorb and transport these quantities of water, so the water table rises, leading to waterlogging. It leads to an accumulation of salts brought in with the irrigation water as their removal through the aquifer is blocked. With the upward seepage of groundwater, more salts are brought into the soil, and salinisation is aggravated.

Increasing water pollution

Agriculture is rapidly emerging as a significant source of water pollution. Many farms discharge large quantities of agrochemicals, organic matter, drug residues, sediments and saline drainage into water bodies. The resultant water pollution poses demonstrated risks to aquatic ecosystems, human health and productive activities, affecting not only the small and micro watersheds but also rivers and streams. The nitrate infiltration contributes significantly to surface-water pollution and is responsible almost exclusively for groundwater pollution by nitrogen. Overall, pollutants that result from farming include sediment, nutrients, pathogens, pesticides, metals, and salts. Impacts from agricultural activities on surface water and groundwater can be minimised by using management practices adapted to local conditions. However, these technologies and skillsets are presently missing amongst the farmer groups in Southwest Bangladesh.

Lack of community actions on managing water bodies

Successful Watershed projects bring together the public, citizen groups, researchers, and government agencies interested in the Watershed and the project's outcome. Some representatives may be interested in protecting water resources, others in enhancing the socioeconomic aspects of quality of life (e.g., jobs, businesses, tourism). Such a broad base of stakeholders promotes understanding of the full range of stressors in a Watershed— physical, chemical, and biological—that may be affecting aquatic life and human health.

Decisions in environmental policies affect a wide range of people, such as communities and individuals, whereby the consequences of policy implementation and implications can stay in people's life for a long time. Yet, farm communities in Bangladesh are not organised at the village level. They cannot participate in an informed dialogue with different stakeholders to arrive at an integrative and interactive bottom-up planning approach to water management.

The engagement of local government bodies in the operation and maintenance of community actions is weak- this is causing weak for water management decision-making at local level. Thousands of canals are already non-functional, resulted poor drainage during rainy reason, which causes flooding, and in dry season ground water lifting using a shallow pump become an alternative option for irrigation. In both cases, farmers lose productivity gains because of less scope for multi-cropping and increases their production cost because of deep irrigation.

Prevailing gender inequality and poor participation of women in decision making for water management and climate change adaption

Women's access to water and their engagement in productive agriculture largely depends on gender relations and their participation in the planning and decision making for water management. The highly patriarchal society of Bangladesh limits women to access to resources, including access to ecosystem services for agricultural inputs, knowledge and technologies on crop diversification and climate change adaptation, access to finance and control over income and assets.

As mentioned in the context analysis, the southwest Bangladesh is handicapped by climate change related factors and inclusive planning for water management, which is exacerbating water insecurity, with significant gender consequences. Women lack equitable access to land and water use - the two essential inputs for agricultural productivity, because of land tenure. As a consequence, for the decisions on water use and management, women's need and priorities are hardly taken into consideration. Women in southwest Bangladesh face diverse forms of social barriers in community based water management resulting in exclusion from the local communities. Water Management Organizations focus on large-scale productive use of water and are rarely addressing the small scale productive and reproductive uses of water. This creates a gap between water users, which is

exacerbating by class and power relations. The creation of community based water management organisations in south west Bangladesh has so far not challenged women's marginalisation, especially in terms of limitations of activity and restrictions on participation.

Impact of climate induced hazards on different population groups in Southwest Bangladesh

The south-western coastal zone, with its intricate riverine network and polder system, has been facing several natural hazards, such as cyclonic wind followed by storm surge, water logging, seasonal drought, soil salinity and high tidal interactions. Impacts of climate induces hazards on different livelihoods group of the south-west region of Bangladesh -

General	Specific	Main groups affected	Storm Surge	Cyclonic high wind	Salinity	Drought	Water logging	High tide & Sea level rise
Agriculture	Crop	Men	Moderate	Low (localized)	Very high	Low	Very high	Low
	Horticulture	Women	Moderate	low	High	Very low	Very high	Low (localized)
Non-crop Agriculture	Fisheries (capture)	Men	Very high	Very high	Not affected	Not affected	No adverse effect	Very high
	Fisheries (Culture)	Men and women	Very high (contextual)	Low	Moderate (contextual)	Very low	High	Moderate (contextual)
	Poultry	Women	Very high	Very high	Very low	Very low	Very high	Low
	Livestock	Women	Very high	Low	Low	Low	Very high	Not affected
Business	Trading/ retailing	Men	Very high	Very high	Not affected	Not affected	High	Moderate (contextual)
Service	Day labour	Men	High	Very low	Very low (contextual)	Very low	Very high	Not affected
	Van puller	Men	High (contextual)	Very low	Not affected	Not affected	Very high	Very high
Students	Educational & recreational activities	Men and women	Very high (contextual)	High (contextua l)	Very low	Not affected	Very high	Moderate (contextual)

In a nutshell, core problems of the southeast region are increased salinity and land degradation, recurrent flooding and water logging, unsustainable agriculture, lack of essential capacity and skill, access to affordable technology, poor irrigation practices, poor drainage system, increasing water pollution, lack of community actions on managing water bodies etc.

The project will result in Sustainable use, protection and restoration of Watersheds for resilient agriculture in Southwest Bangladesh. It entails to ensure water-efficient, climate-smart and regenerative agriculture production systems (that generates higher income, improves soil quality and ecosystem service provision for saline tolerant and climate-resilient seed varieties and technologies to promote a sustainable and resilient agriculture production system). It further will focus on Sustainable harnessing of ground & surface water for agriculture from the watersheds – by rejuvenating/reviving/developing existing and new local watersheds. Finally it will ensure to strengthen Micro-watershed management and governance by local communities to develop governance mechanisms to ensure equitable access to water use for irrigation. Access to and effective and integrated management of the available water resources in 80 water clusters –by various structural and non-structural interventions- is the key component of this project.

Contextual analysis

- Who is/are the target group(s) and why?
- Who are the other main stakeholders?
- To what extent have stakeholders been involved in formulating the proposal?
- Is the intervention aimed at a specific geographical location, and if so, why?

It proposes to implement the project in 80 clusters in the districts of Jashore, Narail, Satkhira, Khulna and Bagerhat of the south-west Bangladesh, which will reach 90,000 farming households and cover a target population of .5 million in 12 Upazilas. Towards harnessing a holistic and integrated approach for efficient water resources management and maximising agricultural productivity, the project will target smallholder farmers across commodities of which 45% will be engaged in aquaculture, 25% in

Dairy, and 30% in Fruits and vegetables, and the field crops (rice and pulses). Given that the average landholding of these farmers are less than 0.5 ha, the project will engage largely with smallholder farmers. The initial analysis indicates that these farmers have an income of little over BDT 270,291 per year, which categorizes them as economically poor. Additionally, as these farmers are in the middle of ecological imbalances, they are most vulnerable to climate changes (ecologically poor). As inclusivity and gender equality are embedded at the heart of the project, efforts will be on having 50% women and youth in different watershed activities and water/climate smart farming practices and enterprises. Besides these, 20,000 man days' green employment opportunities will be created throughout the project life. Overall, 4,800 persons for 255 days' coastal population, preferably women living under the poverty line, will get the scope to work in the watershed construction and management activities in their own community.
The Southwest area of Bangladesh comprises of 4 million hectares or 27% of the country's total land area. The coastal zone in Bangladesh has complex agroecology, with low lying land and huge tidal rivers. To provide protection to agricultural land from tidal and monsoonal flooding and saline water intrusion, around 1.2 million hectares are now enclosed in 139 polders, whose construction started in the 1960s and 1970s.
The polders are home to about ten million people. However, there is a lack of clear guidelines and policy statements, on how branch canals' maintenance would take place and who is responsible for maintaining those. Community farmers only have connection and communication in this regard with the Local Government, the Union Parishad. But the local Union Parishad usually neither doesn't have any special fund for maintaining branch canals under its jurisdiction nor any technical capacity.
Inside the polders, there are initiatives to improve water management structures. But how the water will be used, to produce field crops or aquaculture -is often not regulated by policy guidelines. Thus, there is often a conflict of interest between a large number of smallholder farmers and more powerful but only a few people who can extract more income from aquaculture at the expense of other farmers. Water resource management calls for proper and efficient sluice management (sometimes also on inlet and outlet management). People who live inside the polder require water preservation or drainage of water to support their production choice. The ambiguity in sluice management strategy often creates conflict among the canal water users.
Reduced flows in the tributaries of the Ganges River, saline intrusion into freshwater resources, environmental degradation, and waterlogging during the monsoon season are the main reasons for inefficient water management. Inefficient water management results in the deterioration of existing flood control, drainage, and irrigation systems. Moreover, other barriers like congestion of drainage facilities due to sedimentation, reduced tidal sweep volume, and arsenic contamination is complicating the vulnerability of people of this area along with cyclones and tidal surges.
The Southwest Bangladesh economy is predominantly agriculture-based and about 51% of the 28.6 million people in the Southwest Bangladesh, i.e., 23% of Bangladesh's total population is poor. One of the reasons among many others for state of poverty in the region is widespread use of traditional low-yielding crop varieties, vulnerable to flooding, and lack of proper irrigation facilities. Most of the southern coastal areas are within only 1 - 3 meters of the mean sea level. The southwest area has 78 flood control, drainage, and irrigation systems. Nevertheless, the area suffers from acute water management problems. The impact of rapid climate change is further exuberating the challenges. Excess rainfall, high temperature or draughts lead to low production and crop failure and negatively impact the smallholders' food security and livelihood.
The Southwestern coastal zone has a tremendous potential to create opportunities of national importance through transforming agriculture and improving livelihoods by efficiently utilising resources. The region is blessed with fertile soils, water and wetlands, many rivers and open access to the sea. The area provides a massive surplus of shrimp, prawns, fish, vegetables and fruits to the nation. The mega infrastructural development projects like Padma Multipurpose Bridge, Payra Sea Port, Rampal Electricity Plant, and future expansion of Mongla Sea Port may dramatically change the landscape features (both opportunities and threats) in this region. Managing the region's abundant water resources and fragile land is crucial to long-term development.

Added value

- What is the added value of the Dutch government being involved in relation to other donors, the EU, NGOs and local authorities?
- Are the recipients making an own contribution or co-participating in the activity, and if so, to what extent?

To materialize NL's transition agenda by 2031, NL focuses on consolidation and localization of current SDG-oriented ODA activities for NL-BD collaboration. Before phasing out in 2031, remaining ODA budgets (WM/WASH) are utilized to consolidate the results and impacts from past decades' investments and embedding in BD local institutional structures, and to continue contributing to SDG achievement. Building on last decades' investments, focus area on participatory and agricultural water management got special attention. ODA financed activities are to a large extend executed by NL implementing partners (TA consultants and NGOs), often in collaboration (joint ventures) with local organizations.
SAFAL is a Dutch flagship FNS programme in Bangladesh which will be phased out by 30 June 2022. For consolidation of past success and impact, water management challenges of SAFAL farmers (mostly) will be addressed by this project. It is evident by pilot demonstrations in SAFAL areas that integrated agri-water-climate programme amplify the success of agricultural productivity and livelihoods of the people.

Lessons learned

- What lessons learned (from previous or comparable activities, published evaluations, relevant publications) will be addressed by the activity?

IOB Evaluation in Bangladesh identified that low institutional sustainability of water management due to weak government organisations and weak farmer water use organisations (i.e. WMGs). Hence, maintenance of water infrastructure in Bangladesh is a concern because of the limited mandate and weak functioning of farmers' water use organisations in the operation and maintenance of the infrastructure, and the inadequate budget and poor functioning of Bangladesh Water Development Board for rehabilitation. IOB suggests that the upcoming interventions need to be designed to address water accounting, water efficiency, and long-term climatic and sustainability issues such as the silting up of drainage channels, rising sea level and irregular rainfall. The Blue Gold Program Lessons Learnt suggested that when the water users are involved in devising and implementing plans to use opportunities for better local economic development, they become motivated to engage in maintenance, operation and even construction of small-scale water resources infrastructure to secure the economic benefits. The BGP lessons learnt also suggested that harnessing water management for local economic development also requires that: (i) a greater connection is made between agricultural commercialisation and water management; (ii) that local government institutions are systematically and substantially engaged with the specialised departments, such as BWDB, DAE, DoF and DLS, to develop participatory water resource management from the very onset of an intervention ; and (iii) agricultural extension takes into account the practical experience of aligning commercial production with water management, with due consideration for the economic potential of crops and fisheries as well as the trade-off between them.

Watershed protection

SaFaL –II established six demonstrations of community lead canal management in collaboration with the local government. 1,000 farming households per watershed are optimizing the benefits through appropriate irrigation practices, increase in cropping intensity, and increase in soil health and crop yields. Community members contributed to the development of sub canals. The integrated mangrove shrimp aquaculture (IMSA) model that SaFaL-II piloted in collaboration with WUR and Khulna University in primary canals and ponds demonstrated the water quality maintenance, which resulted increase in yield.

Learning and Recommendation: Both the business models of Watershed management and protection have the potential to replicate and adapted at scale. The community contributions for Watershed protection activities creates ownership among the communities and ensures the maintenance and sustainability of the water structures. It is evidenced that the community ownership results in few people who are influential controlling the groups, thus a model of entrepreneurship development for water structure management is likely to negate the group dynamics.

Climate adaptation

With technical support from Salinity Management and Research Center of SRDI and in collaboration with private sectors, SaFaL-II promoted the cultivation of saline tolerant crops like tomatoes in Khulna and Satkhira districts through the establishment of demo plots. The results show that BARI Tomato-8 is suitable to grow in the soil with medium level salinity in the off-season, Hybrid tomato Mintu Super is an early-season variety that can tolerate medium level of salinity, the winter season variety Bahuboli is also suitable for growing in the low to medium level salinity. The improved variety of Soybean that can be harvested in 90 days instead of 120 days has increased yield from 1.7 Mt to 2.6 Mt per ha, and reduction in production cost from BDT 57,000 per ha to BDT 47,000 per ha, a decrease of BDT 10,000 per ha.

Learning and recommendation: There are available and easy to access climate adaptive practices and replication of such practices can be done through demonstration plots. However, for new variety development adequate time and resources are required to test and conduct trials. Conducting research and development is expensive, as such the collaboration should focus on the provision of field for trials (lab to the field) and information to the research institutes on the problems that require research.

Sustainable Agriculture

106,000 farmers have adopted sustainable agriculture practices which have resulted in 79 % of families reporting increase in income with yield increase of 48%. The adoption of practices has direct co-relation with the increase in yield as per the Midline assessment conducted by Price Water Coopers (PWC).

Learning and Recommendation: The business case for the adoption of sustainable practices is crucial to demonstrate the viability of farming. The farmers tend to rely on first-hand experience and learning before adopting the practice. The project should continue to develop business cases and demonstration plots for every practice or cluster of practices for the benefit of farmers.

Community

1500 producer groups were established by SaFaL and these groups have ensured crop planning, extension services, product aggregation and representation to Union Parishads. The study conducted by PWC and the annual survey conducted by Solidaridad indicated that 92% of the groups have higher bargaining power.

Learning and Recommendation: In terms of technology adoption and market linkages, the production clusters approach has appeared as an effective mechanism to produce and supply safe and quality farming products to the markets. The cluster-based producer groups have widened the scope of collaboration and investment of public- private and financial institutes.

Gender

SaFaL-II promoted sustained, inclusive and sustainable economic growth, full and productive employment and decent work for women in the agricultural supply chains. Women smallholders and entrepreneurs were being supported to achieve higher levels of

productivity of economies through diversification, technological upgradation and innovation. Project encourages and supports formalization and growth of micro, small- and medium-sized women enterprises through assisting access to financial services. In addition, women are supported in the decision-making process of community based collective action for Watershed reconstruction and management.

Learning and Recommendation: Promotion of gender equality in eco-system services for productive agriculture and Watershed activities largely depend on the collectivization and capacity development of women. Men in the communities need sensitization which can create an environment for women to engage in groups and agricultural activities. Women participation and occupying leadership positions in community groups should be scaled.

Digital Inclusivity

An Interactive Voice Response (IVR) system has been developed to provide livestock advisory services to send text and voice messages to the dairy farmers, providing information and training related to improved dairy farming practices. Along with this, a digital solution for promoting the adoption of digital wallets through bKash and mobile banking has been facilitated to have access and control over income for the women farmers. The digital tools could be scaled to all the farming communities.

Learning and Recommendations: To reduce the digital divide and increase the control over income by women, it has been realised that mobile wallets can help women to get to their income from agri-business. The savings features and other financial services are convenient and reliable for women to build their asset base if they are motivated. However, due to lower ownership of digital assets, there are structural problems for bridging the digital divide. It is critical to provide ownership to phones or create community digital infrastructure for easy access to digital technologies.

Problem analysis

- Please explain the Theory of Change.

Theory of Change

The problems faced by farmers in Southwest Bangladesh primarily indicate the structural issues around climate-resilient agriculture production; crop loss and loss of agricultural land due to flooding and waterlogging; water quality and pollution and non-participation of communities in the decision-making forums and governance of water structures. These structural problems have led to lower than the optimum realization of farm and off-farm productivity and severely hampered livelihood opportunities. Climate change has worsened the impact with erratic and unseasonal rainfall, rising temperatures and salinity level increases.

The overall goal is thus to ensure “Sustainable use, protection and restoration of Watersheds for resilient agriculture in Southwest Bangladesh”. The lessons from previous projects have indicated the importance of understanding the interconnectedness of the issues and overlapping of the solutions. The proposal factors all the interlinkages and adopts pathways that amplify and augment each other rather than creating a cannibalization effect. These have been achieved through careful mapping of activities, alignment with the various National Policies and plans, and discussions with DAE and LGED for harmonization of the efforts.

To achieve the overall goal, the following outcomes are targeted -

Outcome 1: Ensure water-efficient, climate-smart and regenerative agriculture production systems

Outcome 2: Sustainable harnessing of ground & surface water for agriculture from the watersheds – by rejuvenating/reviving/developing existing and new local watersheds.

Outcome 3: Strengthen Micro-watershed management and governance by local communities to develop governance mechanisms to ensure equitable access to water use for irrigation.

These outcomes are intended to be achieved through the adoption of three pathways:

Pathway 1: Water efficient, Climate Smart and Regenerative Agriculture Production Systems

If farmers are provided with a business model of farming that not only generates higher income but also improves soil quality and if there is an ecosystem of input service provision that supports the production, additionally through scientific research and if saline tolerant and climate-resilient seed varieties and technologies are introduced, sustainable and resilient agriculture production system could be created.

Pathway 2: Watershed Protection

It refers to the micro sheds that exist within the broader Watershed in the region and the actions are oriented towards micro shed protection. The understanding is that the farmers have been using surface water and now increasingly the groundwater for irrigation as well. They face multiple levels of challenges ranging from the unavailability of water in the dry season and waterlogging and drainage during monsoons. If the local community could be supported with locally relevant solutions for controlling water flow into the farms (dykes, ridges, raised beds etc) to manage the excess water and if the local community could be mobilized to develop micro-irrigation structures using local techniques aligned with LGED, DAE and BWDB, it could provide a model of reducing the twin problems of drought and waterlogging and enhance farming based rural livelihood.

Pathway 3: Watershed management and governance by local communities

The experience of working with WATERSHED committees have enriched the understanding and need for involvement of local communities in the Watershed planning, implementation and monitoring. Being the underlying principle of our actions, we intend to create new and strengthen existing WATERSHED committees based on the Watershed mapping. IF local communities are provided with adequate capacity, information and advocacy skills, they will play an important role in local government

implementation of the IWRM actions. We shall specifically engage women farmers to participate in and lead the WATERSHED committees.

Gender

- Does the proposal include a gender analysis?
- Does the proposal justify the target group's gender-specific interests and needs (and why)?
- Have women and young people been included in the stakeholder analysis?

Women's role in the management of watersheds has been deliberated, studied and acknowledged in various studies. The FAO in its report on role of women in Watershed emphasize that the participation of women enhances the effectiveness of IWRM actions. Similarly, the positive effect of role of women in agriculture production is established. It is evident that the climate change impacts and the coping strategy adopted are different by men and women. These are heavily influenced by determinants of socio-economic factors, livelihoods, people's capacity and access to knowledge, information, services and support – all of which may differ along lines of gender. In some cases, women have less access to climate information, such as weather forecasts through SMS or radio, in comparison to men (Twyman et al., 2014; Tall et al., 2014; FAO, 2013b; Kyazze et al., 2012). However, when women have access to information on CSA, they are likely to accelerate the adoption of better water practices.

The proposed project will further strengthen the gender inclusive approach that Solidaridad has successfully demonstrated in SaFaL –II project. SaFaL successfully facilitated the participation and engagement of women (47% out of 106,000 farming households are women). Strategies and approaches would include women and youth in the water-efficient agriculture production system and in water governance and the management of watershed. The project will use as peer educator the 45,850 women farmers, lead farmers and social entrepreneurs of SaFaL-II farmers to embed the reach, benefit and empowerment of women in every nodes of the interventions to drive towards a gender transformative change. It will create and promote equal opportunities to participate and benefit from the project interventions and outputs related to Regenagri, climate smart agriculture and water efficient practices, access to water and climate resilient technologies and services and women's' participation on watershed development and management.

The project mainstreams the role of women across all the pathways. Gender responsiveness and cultural acceptable cluster specific water, agriculture and climate nexus options will be promoted at the cluster and sub-cluster level.

The following are the mainstreamed gender inclusive actions:

A. Pathway 1: Water efficient and regenerative agriculture production system:

1. The project would ensure women's participation in the capacity building for the adoption of climate smart and regenerative agricultural practices to ensure equal and inclusive benefit from the agricultural Engagement of women would be promoted in water management to ensure improved decision making and control over resources
2. The social norms like restriction in mobility, digital access, lack of financial inclusion will be nudged by engaging the women in capacity building Sensitization of the men and head of the household will be done simultaneously conducted to create a conducive environment for women.
3. Design of women focused capacity building initiative which is gender- differentiated: Women in Southwest are less literate than men, hence the design shall be made pictorial and video-based. The examples and terminologies used in the training modules will be women friendly (relatable). Additionally, addressing women's engagement in other productive engagement and mobility, the timing of the training programme shall be adjusted in accordance with the time schedule of women (considering the household workload).
4. To ensure digital participation, the project will ensure access to digital information especially for women through IVR systems which will push voice messages. This will ensure women's access to information, support decision making and reduce the digital divide in the communities.

B. Pathway 2: Watershed Protection

1. The role of women in the pathway will be largely through the local community groups and WATERSHED committees
2. In the event of engagement of the local community and linkages to cash for work initiatives, women will be given
3. The project will promote the participation of women, men and youth, and explicitly address gender issues via training and workshops in watershed

C. Pathway 3: Watershed Management and Governance

1. The project will ensure the participation of 20% or more of women in WATERSHED committees and also attempt to have these committees led by women.
2. The MSP will also have the participation of women and the project will ensure at least 1 woman in the decision-making committee within the MSP.
3. In the policy analysis and preparation of white papers, specific attention and emphasis will be provided to women's issues and their role in IWRM. Women-specific challenges will be validated in the preparation of the documents and through the MSP the project will influence the relevant institutions to put gender equality at the heart of the watershed management and climate adaptive agricultural practices.

Climate change

- Does the proposal include an analysis of the possible effects of climate change on the activity or its results?
- Does the proposal include any interventions to combat these effects (adaptation/mitigation)?

Bangladesh is one of the most climate vulnerable countries in the world due to its topography and geographic location. It is a low-lying deltaic country that is increasingly faced with a variety of natural hazards, including floods, cyclones, storm surges, river erosion, droughts, and salinity intrusion. The country is highly prone to disasters due to climate variability, high population density, high incidence of poverty and social inequity, poor institutional capacity, and inadequate financial resources. Exacerbated by climate impacts, recurring disasters significantly affect agriculture and rural livelihoods, and various studies conclude that climate change will pose a serious threat to food security. Also, climate change threatens the significant achievements made by Bangladesh in the last decades in raising incomes and reducing poverty. Targeted project areas are also climate vulnerable area and interventions are also designed to combat climate change challenges.

These recurrent disasters significantly affect the country's agriculture sector. Climate is the most important factor in rice production and changes in climate immediately translate to rice crops, the dominant food in Bangladesh. To illustrate, it is estimated that climate change can reduce overall rice production in Bangladesh with 7.4% each year over the period 2005-2050. Next to agriculture, the hydrological systems in Bangladesh are also highly sensitive to climate change. Increased temperatures are expected to cause substantial evaporation and changes in mean rainfall, rainfall intensity, and rainfall seasonality. Those, in turn, can impact soil moisture, stream flow and groundwater recharge, which in turn affect agricultural production processes, and the rural livelihoods of millions.

The design of the project and its sub-activities very much take climate change aspects into account. Outputs contribute to beneficiaries' adaptive capacities by improving their climate resilience. The project is therefore –by its nature- a direct response to climate change risks in Bangladesh, by supporting the implementation of climate resilient water management practices, providing project beneficiaries with climate smart agricultural technologies, and train rural communities to manage natural resources in a climate smart way that will make them resilient in the face of changing conditions (see further below). Hence the significant marker for climate adaptation.

To adapt to climate change, in addition to earthworks and its maintenance/operation/management, farmers need support to adopt resilient climate smart practices and improved agribusiness. The project will therefore support non-engineering adaptation measurements, including (1) Ensure water-efficient, climate-smart and regenerative agriculture production systems , (2) support strong, active, inclusive water management groups and clusters, (3) use of digital technology for advisory services for better productivity, (4) Sustainable harnessing of ground & surface water for agriculture from the existing local watersheds, and (5) Strengthen Micro-watershed management and governance by local communities to develop governance mechanisms to ensure equitable access to water use for irrigation. These actions all aim to reduce vulnerability of the poor farming households to climate change and instead increase their disaster resilience.

All these outputs will contribute to the overall outcome: to increase climate resilient agricultural productivity and profitability in selected geographic areas in the south-west Bangladesh.

Cooperation, harmonisation and alignment

- Does the activity involve cooperation with Dutch organisations, the EU or other donors (including delegated cooperation), local organisations or other parties?
- How does the activity contribute to harmonisation and/or multi-donor financing?
- What is the degree of (policy and financial) alignment?

To foster effective implementation of the IWRM system, the project will develop collaboration and partnerships with public-private agencies, the local implementing partners, and research institutes to have greater harmonization and complementarity with other programming in the target districts. A coordinated process will be developed for the development and management of water, land and other landscape resources to maximise the results and outcomes outlined in the project. Co-creation would be made to demonstrate tools for water efficiency, climate smart agriculture, and digital integration tools and technologies at scale. The partnerships and collaboration will also be maximised for policy advocacy to develop tailor made enforcement/reformation of the polices and plan of actions at the local level.

Considering that there are ongoing efforts by the government department in the proposed geographic location of the project, a strong collaboration will be developed with Union Parishads, Bangladesh Water Development Board, LGED and DAE, BARC for alignment of water initiatives and implementation of IWRM actions.

The project will closely work with DAE for developing robust support mechanisms for agricultural productivity. Clusters would be selected through a consultative process to avoid duplication of efforts and improving synergy and complementarity for access to services, technologies and marketing of farm produces. In selection of crops and technologies for climate smart agriculture and land use planning, the project will make coordinated efforts with BARC to promote proven technologies that suits better in the local context and are affordable for the farmers.

Similarly, the project will develop close working relationship with the Local Government Engineering Department (LGED) in planning and implementation of water and market infrastructures those could complement to each other programming and demonstrate larger impact as well avoidance of duplication of efforts for maximizing resource efficiency.

Public and private sector engagement will be fostered at the clusters through the MSP formed by the project to promote sustainable use, protection and restoration of Watersheds for resilient agriculture in Southwest Bangladesh.
Synergy and coordination would be explored and facilitated with the General Economic Division, of the Ministry of Planning to develop synergy and complementarity with the Bangladesh Delta Plan 2021, Sustainable Development Goals and the 8th Five Year Plan. Cooperation would be facilitated with the local and national stakeholders in undertaking research and analysis, and the development of white paper and the vision document for enhancing water and land use efficiency would best optimized to influence national policies for securing a supportive network. Knowledge and learnings generated through the project will be shared with the stakeholders to scale up the successful intervention on IWRM.

Digitalisation

- Have proposed digital technologies been developed or chosen in collaboration with end-users?
- Does the proposal include an analysis of the local digital ecosystem?
- Is data security guaranteed?
- Are digital solutions locally sustainable/relevant?
- Is duplication avoided?

Digital Solutions are a very powerful vehicle for scale. In the past years, digital tools allowed Solidaridad Asia to reach over 400,000 farmers by offering access to production and market information, and services such as market access, while enabling stakeholders to make strategic decisions based on real-time intelligence. Digital tools cannot replace a minimum of physical facilitation completely and hence they have adopted a combined approach. Nonetheless, using mobile phone based digital tools, they propose to reach 90,000 farmer-beneficiaries targeted under the project. They constantly strive for (ethical) digital inclusion, among which includes access to devices, networks and literacy.
Context-specific digital technologies are embedded throughout their main interventions and pathways, as they have a great potential to offer inclusive and early access to knowledge and information, and can contribute to transparency and efficient implementation of the policies and be a driver for change. Digital tools increase the efficiency of long-term capacity building and allow to engage with more, and also more remote, farmers more frequently. Interactive Voice Recognition allows them to reach thousands of not formally educated farmers and workers. The digital application will be developed by Solidaridad in alignment and participation of the Union Parishad and Water Management Groups. Necessary support will be extended to the local bodies to manage and maintain the digital applications. The maintenance of the servers after the project period will be incorporated within the Union Parishad budget which will ensure sustenance beyond the project period. In the present project Solidaridad will adopt digital mechanisms and platform for:

1. **Empanelment of farmers**: There will be a digital record of all farmers who shall be part of the project. These will be updated annually. A platform for farmer engagement and empanelment will be developed. This will be an adaptation of the existing Solidaridad developed digital application.
2. **Digital advisory services:** Two levels of digital services will be used. For the farmers who use push button phones (not smartphones), Interactive Voice Response (IVR) system will be adopted. CSA, regenerative practices and water-efficient practices will be converted into messages in voice and text. These will be sent to all the farmers based on the cropping pattern and crop cycle. The farmers who have access to smartphones will be provided with applications that will contain videos and messages related to water-efficient and regenerative practices. The application will also contain Soli-Bot: developed voice-enabled interactive system.
3. **Tracking of water-efficient practice adoption:** The project will install water meters in select farms that will record the water usage and provide data online to the farmers. Additionally, soil testing kits will be used to track the improvement in soil health. Solidaridad will with support from Government of Bangladesh, provide weather information stations and soil sensors that will provide real-time information on rainfall, temperature and other natural calamities.
4. **Pest detection**: The application developed by Solidaridad for the detection of pests will be used across farms. The farmers will provide pictures of the leaf or pests and the application using machine learning will be able to detect the nature of the pest and provide recommendations for pest management.
5. **Satellite-based imaging system** will be used for understanding and assessing the Watersheds and micro watershed improvements.

Additional remarks (if applicable)

Results

Water

IWRM, water efficiency in agriculture and water governance

Indicators

2.A. Number of people reached with water governance interventions aimed at river basins and deltas with good water quality and quantity, as a result of Dutch support
Measurements: Baseline: 0 Target: 120000

- Individual result: 181430
  Comment:
- Individual result: 244330
  Comment:

2.B. Number of hectares reached with physical interventions aimed at river basins and deltas with good water quality and quantity, as a result of Dutch support
Measurements: Baseline: 0 Target: 9000

- Individual result: 9693
  Comment:
- Individual result: 24121
  Comment:

2.C. Number of hectares reached with water governance interventions aimed at river basins and deltas with good water quality and quantity, as a result of Dutch support
Measurements: Baseline: 0 Target: 0

- Individual result: 24121
  Comment:

2.D. Number of hectares in water-related ecosystems reached by physical interventions aimed at protection and/or restoration, as a result of Dutch support
Measurements: Baseline: 0 Target: 0

- Individual result: 24121
  Comment:

2.E. Number of people reached with physical interventions aimed at river basins and deltas with good water quality and quantity, as a result of Dutch support
Measurements: Baseline: 0 Target: 24000

- Individual result: 26902
  Comment:
- Individual result: 37629
  Comment:

2.F. Number of people reached with water management services aimed at river basins and deltas with good water quality and quantity, as a result of Dutch support
Measurements: Baseline: 0 Target: 7000

- Individual result: 15947
  Comment:
- Individual result: 37629
  Comment:

3.5. Empowerment of groups in vulnerable situations

Learning questions

What have we learned from this activity for empowerment of groups in vulnerable situations?
Measurements: The watershed committees will be provided with adequate capacity, information and advocacy skills to ensure that they are engaged with local government stakeholders for the operation and the maintenance of watersheds. Equal participation of women & youth

- Individual result: Regular training and capacity-building sessions for committee members, farmers, and local groups are vital for the successful adoption of sustainable practices, and enhance their knowledge and skills to manage their resources effectively.
  Comment:
- Individual result: Public-private sector engagement is crucial in scaling up the adoption of water use efficiency and climate-smart agriculture practices. They play a vital role for providing innovative technologies and better market uptake.
  Comment:

Indicators
3.5. What has been achieved by this activity on empowerment of groups in vulnerable situations?
Measurements: Local water user groups at the sub-catchment level will be supported and capacitated to plan, promote and monitor the implementation of a water- efficient and regenerative production system

- Individual result: This has led to the formation of 25 community-led micro-watershed committees to oversee the governance of micro-watersheds, comprising 726 members with a 32% female representation and inclusion of youth members for increased participation
  Comment:
- Individual result: 1)14 guidelines & 3 training modules on climate-smart agri, regenerative agri, and water-efficient techn.; 2) mobile-based digital advisory system on agri and climate info; 3) 43,107 farmers in 390 WUGs & 55 MWC; 4) 71,708 farmers CB on climate smart agri
  Comment:

2. Water Management

Water is an important factor for development, but too much, too little or too dirty water can be very harmful to development. It is important that everyone has access to sufficient water of good quality and is protected against water related disasters. Additionally, it essential to safeguard biodiversity and to protect and restore water-related ecosystems. NL MFA promotes sustainable withdrawals and supply of freshwater to address water scarcity (6.4), implementation of IWRM at all levels, including through transboundary cooperation (6.5) and protection and restoration of water-related ecosystems (6.6). Target: providing 3 million people per year (on average) with improved river basin management and safe deltas, as a result of Dutch support.

Learning questions
What have we learned from this activity for the result area Water Management?
Measurements: Sustainable management, protection, and restoration of micro watersheds for resilient agriculture, micro-watershed management and governance by local communities, equitable water access, sustainable extraction and use of both ground and surface water

- Individual result: Community Engagement is Crucial: Engaging the community by involving community members in the planning, decision-making, and implementation processes ensures buy-in, fosters a sense of ownership, and enhances the sustainability of projects.
  Comment:
- Individual result: The project not only increased yield and profitability but also enhanced resilience, improved food security, and strengthened market linkages. These results demonstrate scalability and sustainability of water management model and agricultural practices.
  Comment:

What has been achieved by this activity on the result area Water Management?
Measurements: - 80 micro-watersheds developed at the sub-catchment level and 450,000 people (men, women and youth) are benefiting

- 90,000 farming households are optimising increase yield and income
- 41,000 hectares of land at the sub-catchment level are covered
  - Individual result: A total of 24 micro-watersheds successfully revitalized, 491 water-use groups have been established following community consultations, 195 demonstration plots showcasing 6 types of water-efficient technologies and practices has been established.
    Comment:

- Individual result: Up to Dec '24, 51 micro-watersheds are rejuvenated with 24121 hectares land with increased availability of surface water for irrigation. 52278 farm hhs benefit from the rejuvenated micro-watersheds through increased cropping intensity and increased yield
  Comment:

Food and Nutrition Security

B. Productivity and Income

Indicators
Outcome B.1.1. Number of SSFPs (disaggregated for male/female) who progressively realize a living income
Measurements: Baseline: 0 Target: 120000
- Individual result: 181430
  Comment:
- Individual result: 244330
  Comment:

Outcome B.1.2. Number of SSFPs (disaggregated for male/female) who progressively decrease the yield gap
Measurements: Baseline: 0 Target: 4000
- Individual result: 11298
  Comment:
- Individual result: 52278
  Comment:

Reach B.2.1. Number of SSFPs directly reached with activities aimed at structural/systemic improvement of their agricultural performance
Measurements:
- Individual result: 181430
  Comment: In consultation with DHA outcome result copied to reach indicator
- Individual result: 70189
  Comment:

Reach B.2.2. Number of SSFPs directly reached with activities aimed at temporary/partial improvement of their agricultural performance
Measurements:
- Individual result: 70189
  Comment:

C. Sustainable farmland use

Indicators
Outcome C.1.1. Number of hectares of SSFPs' farmland under at least 2 conservation practices
Measurements: Baseline: 0 Target: 9000
- Individual result: 9693
  Comment:
- Individual result: 68125
  Comment:

Outcome C.1.2. Number of hectares of SSFPs' farmland that agro-ecologically became more resilient to shocks
Measurements: Baseline: 0 Target: 0

Reach C.2.1. Number of hectares of SSFPs' farmland directly reached with activities aimed at structural/systemic improvement of agro-ecological sustainability
Measurements:
- Individual result: 9693
  Comment: In consultation with DHA outcome result copied to reach indicator

- Individual result: 68125
  Comment:

Reach C.2.2. Number of hectares of SSFPs' farmland directly reached with activities aimed at temporary/partial improvement of agro-ecological sustainability
Measurements:

Monitoring and evaluation

Monitoring

- Specify what reporting information is required for this activity, based on the activity analysis decision tree (see Help).

Include the following elements:

- Planning versus realisation: tracking progress against predetermined objectives as laid out in the project proposal.
- Performance and quality: checking relevance and appropriateness of the implementing organization's performance based on key assumptions in the proposal and the outcomes of the risk analysis.

Pay attention to the method and frequency of monitoring and describe the roles and responsibilities. For further information, see Help.

Evaluation

Describe whether a final evaluation and/or a mid-term review has been planned. If yes, state:

- who will commission the final evaluation and/or mid-term review (for options, see Help);
- whether the procedure and practical arrangements have been agreed on with the implementing organisation (for details, see Help).

Through results-based management, PMEL (Planning, Monitoring, Evaluation and Learning) team in Solidaridad Asia aims to improve the effectiveness (achievement of desired result within planned cost) and efficiency (execution of activities in a planned manner and within the time frame) of the project through rigorous evidence and insights.

The project will have a systematic approach for measuring progress towards targeted Impact, Outcome -and Immediate Outcome, identify shortcomings in project activities, inform decisions to adjust course of actions, and facilitate communication of results to donors, counterparts, and other stakeholders.

The project performance data will be of high quality to support the appropriate level of management decisions. The project M&E system will promote a learning culture alongside its main objective of tracking the program's progress against the indicators. To promote a learning culture, the project will ensure an environment for all implementing staff and stakeholders to understand the pathways of change and build an environment of open discussions and enquiry. The M&E staff will document the best practices, lessons learned/success stories, key challenges, and critical assumptions including the ways of addressing unintended risks, though the evaluation and need-based thematic studies will have a prime source of generating knowledge.

In the inception phase, the project will have planned and designed a detailed M&E plan, including indicators in line with the impact pathways, methods, tools, resources, a data management plan and clear definitions of the roles and responsibilities regarding M&E activities. Further, a rigorous methodology to assess the impact of the project will be undertaken.

Monitoring

M&E team and project staff will play a prime role in organizing data collection events throughout the project period under the supervision of the Regional M&E Coordinator and respective line supervisors. They will support the third-party evaluators/consultants. The project performance data will be collected quarterly and annually and in line with the project requirement. To initiate the process of data collection, profile of all the farmers engaged with the project will be collected through digital means (application developed by Solidaridad).

Quarterly monitoring report: On a quarterly basis, activity and output level progress and mostly quantitative data on the number and nature of project activities undertaken and outputs delivered will be tracked using digital means. These will be analysed on a periodic basis to support management decisions.

Yearly reflection report: Each year in December the project will prepare an annual report based on the compilation of quarterly monitoring data as well as for the reflection of outcome and impact level changes project will conduct an internal annual survey report. These will be shared across relevant stakeholders which will help to evaluate the progress by the stakeholders, areas of weakness or problems of design/ approach requiring modification; and potential solutions and remedial actions to be undertaken to improve program performance.

The M&E staff will employ the appropriate methods and tools for data collection and analysis, as per of output and outcome indicators. The M&E staff will use standardized reporting forms, primary and secondary data sources, and a variety of data collection methods, depending on the indicator and the availability of information, and as appropriate. This will include reports completed by field staff, publicly-available national statistics, and primary data collected using surveys, focus groups, interviews, and the records of program partners and beneficiaries. Implementing partners and program beneficiaries will be key sources of primary data and will be required to collect and report such data as indicated in the farm record book, White paper, Training Records, Volumetric measure etc. The project will establish a Management Information System (MIS) in the first year to capture data and information over the life of the project.

The project monitoring will also include monitoring of VSM activities and market uptake for of quality and services by the farmers through MSMES developed by SaFaL. The over-sight of the VSM activities will be based on the annual financial and activity plan developed by VSM towards attaining business self-sufficiency. A monthly review of VSM shall be held along with the VSM staff and leadership team. In addition, volume of products sourced by the private sector and their investment will be measured on an annual basis.
The Netherlands Embassy establishes a learning & exchange platform for comparing and evaluating Participatory Water Management (PWM) models and exchanging lessons learnt between various stakeholders and projects. This contributes to localization and consolidation of IWRM activities in 2023. Solidaridad is expected to pro-actively participate and contribute to this platform in which various Bangladeshi and Dutch representatives will be involved.

Evaluation
Solidaridad Network Asia believes that evaluations are an important element of a comprehensive M&E system and a key management tool in both supporting and ensuring the effective implementation of the project and the achievement of project goals and outcomes. Over the project cycle, the project will commission the following evaluations:
Baseline Study: A baseline study will be conducted during the inception phase by the third party agency. The primary purpose of the baseline study is to generate baseline information and data against identified indicators. The baseline study will provide a benchmark that would guide to a collection of follow-up data and information over the life of the project. The baseline information will allow measuring the effect and impact of the project interventions. ToR would be developed in consultation of Embassy and pre-approval from the EKN is needed.
Mid-term evaluation: The program will undertake mid-term evaluations in close collaboration with project staff and stakeholders. The mid-term findings will form the basis for possible strategic adjustments in the program approach. ToR would be developed in consultation of Embassy and pre-approval from the EKN is needed.
An end-line evaluation: At the end of the project, end line evaluation will be initiated. The evaluation will provide data, analysis, and conclusions on how well the project was designed and implemented, as well as experience-based learning on what worked, what did not, and other factors that need to be considered in planning and funding assistance programs with similar goals and objectives.
All ToR would be developed in consultation with Embassy and pre-approval from the EKN is needed.
The Impact and Sustainability aspects will be evaluated at later stage. This assessment will refer the baseline study and may assess the following:

- Water resources infrastructure and management.
- Impact in terms of agricultural production at household and subproject levels.
- Impacts on fish production and on any changes in the livelihood of those engaged in culture and capture fisheries.
- Benefits accrued in terms of employment and increased production by various categories of farmers.
- Growth in income and employment of landless laborers at the household and subproject level.
- Impact on livelihoods of women with focus in effectiveness of support of income generating activities.
- Impact on poverty and overall socio-economic development.
- Impact on environment, including biodiversity and water quality.

Final Evaluation by DHA:
The activity budget exceeds €5 million, hence, a Final Evaluation will be carried out separately in consultation with IGG and IOB Helpdesk (ToR, engaging of evaluation expertise). This evaluation shall be carried out in 2026, most likely during the final months of the implementation phase, to be able to interview relevant stakeholders. The evaluation will be managed by DHA, financed from the Water Support Fund (28956), and independent from evaluations by Solidaridad.
This evaluation is expected to measure (in addition to the learning questions as defined above in section the overall relevance, effectiveness, efficiency, long-term impact and/or coherence of the project.
A more detailed indicator measurement methods is provided in the log frame.

Finance

Budget breakdown

- Include an overview of the activity budget, including overhead costs.

Budget overview has been included.

- Is the budget arithmetically correct?

Yes, the budget is arithmetically correct.

- Are the amounts/rates in the budget acceptable?

Proposed budget, fees and rates are acceptable.

- Briefly explain the structure of the budget.

Please see attached budget.

- Are overheads proportional to outputs? What is included? What is recharged?

The overhead included to the budget is in accordance with the organizational policy and required to support in implementation of the project by the head and country office management and logistics.

- Is implementation conditional on the budget being amended in an inception phase? (Specify the requirements that the budget must satisfy and the date by which the budget must be amended)

The implementation of the project will start with an inception phase of 6 months. Activities and the budget for the inception phase has been separately mention. After the inception phase, annual activity and budget cycle will be followed. Necessary changes will be proposed with the submission of the annual plan of each year.

- Is the budget suitable as a management tool (linking outputs to budget)?

Proposed budget can be used as a management tool for the monitoring and evaluation.

Details Budget of SAFAL for IWRM					
Budget Head	**Total Cost**				
	Year 1	Year 2	Year 3	Year 4	Total
Pathway 1: Climate Smart and Regenerative Agriculture Production Systems:	**320.094**	**376.043**	**303.053**	**339.851**	**1.339.041**
Work Package 1: Strengthening of Local Community Groups	**103.605**	**35.944**	**13.242**	**-**	**152.792**
Activity 1.1.1: Collectivisation of SaFaL and other farmers in the project area	55.985	11.776	-	-	67.761
Activity 1.1.2: Orientation of the Local Community Groups	37.519	11.637	-	-	49.156
Activity 1.1.3: Cluster based crop planning	10.101	12.532	13.242	-	35.875
Work Package 1.2: Agriculture Extension and Advisory Services	**202.058**	**290.369**	**238.313**	**297.441**	**1.028.180**
Activity 1.2.1: Capacity Building module development	30.639	0	-	-	30.639
Activity 1.2.2: Digital advisory services development	55.453	65.778	27.258	45.857	194.346
Activity 1.2.3: Establishing Demo plots	26.281	33.416	35.313	25.446	120.456
Activity 1.2.4: Soil fertility improvement	8.989	16.723	17.672	8.484	51.867
Activity 1.2.5: Climate Resilient seed development	37.721	68.378	45.981	75.545	227.624
Activity 1.2.6: Implementation of capacity building	2.975	106.074	112.089	142.109	403.248
Work Package 1.3: Water efficient practice promotion	**14.432**	**49.729**	**51.498**	**42.410**	**158.069**
Activity 1.3.1: Identification and development of water efficient technologies	1.604	1.989	1.051	-	4.644
Activity 1.3.2: Implementation of the water efficient technologies	12.828	47.740	50.447	42.410	153.425
Pathway 2: Watershed Protection	**386.108**	**516.200**	**545.472**	**33.077**	**1.480.857**
Work package 2.1: Hydrological mapping and plan development	**240.323**	**305.841**	**323.185**	**30.415**	**899.763**
Activity 2.1.1: Partnership with Research Institutes and University for hydrology mapping and mapping of water structures	32.066	14.919	15.766	26.482	89.232
Activity 2.1.2: The micro watershed design and farm design will be developed jointly by the Watershed committee and the local community groups	16.020	22.378	23.647	303	62.348

Activity 2.1.3: Based on the advice from LGED and other water experts, a re-design of the structures will be done.	192.238	268.543	283.772	3.631	748.183
Work package 2.2: Recharge and rejuvenation of water source	**145.785**	**210.359**	**222.288**	**2.663**	**581.094**
Activity 2.2.1: Based on the hydrology mapping, identification of land for fresh ponds construction will be undertaken	128.158	179.029	189.181	2.420	498.789
Activity 2.2.2: Identification of new technologies for fresh water storage: In partnership with the Research Institutes, we will identify innovative technologies for fresh water storage	17.626	31.330	33.107	242	82.305
Pathway 3: Watershed management and governance	**56.959**	**99.439**	**105.078**	**130.416**	**391.891**
Work Package: 3.1: Formation and strengthening of Watershed committees	**56.959**	**99.439**	**105.078**	**130.416**	**391.891**
Activity 3.1.1: Identification of watershed clusters	10.467	746	788	-	12.001
Activity 3.1.2: Formation of Watershed committees	4.321	5.371	5.675	9.542	24.909
Activity 3.1.3: Capacity building of Watershed committee and Local Community Groups	30.144	38.193	40.358	67.786	176.481
Activity 3.1.4: Formation of Multi Stakeholder Platform	12.027	55.130	58.256	53.088	178.500
Programme Management	**73.149**	**64.875**	**59.078**	**82.607**	**279.709**
Staff recruitment	3.191	1.636	1.677	1.718	8.222
Staff capacity building	9.415	9.650	2.473	2.804	24.342
Project Evaluation (BL/ML/EL)	24.500	12.556	12.870	26.384	76.310
Annual surveys	7.979	8.178	8.383	8.592	33.132
Project monitoring coordination meeting	9.574	9.814	10.059	10.311	39.758
Financial Audit	14.500	14.863	15.234	15.615	60.211
Documentation and communication of project actions and results	3.989	8.178	8.383	17.182	37.733
Human Resources	**512.253**	**545.198**	**567.006**	**584.279**	**2.208.735**
Project infrastructure	**189.383**	**92.817**	**122.018**	**89.599**	**493.817**
Motorcycles	63.191	-	-	-	63.191
Office equipment's	38.404	2.726	29.675	2.864	73.669
Office supplies	8.298	8.505	8.718	8.191	33.712
Office operations (rent, electricity etc.)	79.489	81.586	83.625	78.544	323.244
Travel	**70.126**	**71.879**	**73.676**	**71.722**	**287.402**
Intercontinental Travel	4.468	4.580	4.694	4.812	18.554
Lodging and Boarding	16.340	16.749	17.168	17.597	67.854
In-country Travel (Air)	7.021	7.197	7.377	7.561	29.156
Ground transport	42.296	43.353	44.437	41.752	171.839
Overheads Support-8%	**128.646**	**141.316**	**142.030**	**106.524**	**518.516**
Overheads	128.646	141.316	142.030	106.524	518.516
Total Budget	**1.736.717**	**1.907.767**	**1.917.411**	**1.438.076**	**6.999.970**

Earmarking

- Is the Dutch contribution to the programme earmarked (i.e. reserved for a specific purpose)? If so, specify the reasons why.

n.a., the Netherlands is the only donor to this programme.

Prepayments

5. Based on the prepayment decision tree (see Help), do the payments need to be entered as prepayments and why? In the case of a lump sum, assess this against the applicable criteria and give the reasons for your choice.

Payments will be registered as prepayment in SAP. Clearing/justification will be done on the basis of accepted narrative, financial and audit report.

4. What is the maximum percentage that can be paid as prepayment, and why?

95% of the approved funding of the contribution agreement. 5% will be settled after determination of the total actual expenditure of the project, on the basis of the accepted final reports.

4. Which are the reporting obligations on the basis of which prepayments can be closed?

Approved Narrative, Financial and Audit Report.

Available resources

	Foreign currency	EUR
Implementing organisation's own contribution		
Firm commitments by other donors (for each donor)		
Dutch contribution		6.999.970
Total available resources		6.999.970
Budget needed		6.999.970
Still to be financed		
Soft commitments by other donors (for each donor)		
Uncovered balance		

- Are there any non-financial contributions relevant to implementation of the activity, such as deployment of volunteers, availability of buildings, materials, etc.?

There will be community contribution, specifically to operate the water infrastructure and maintenance of the micro-watershed in the community managed by the Water Groups. This is not included in the budget since the project will contribute to build the capacity of these groups.

- If there is an uncovered balance, how will this affect implementation of the activity (e.g. proportional reduction in outputs, omission of regions) and how will this affect the decision whether to fund this activity?

Not applicable

Grant with a repayment obligation, loans, equity investment or guarantee

- Does the Dutch contribution take the form of a grant with a repayment obligation, a loan, an equity investment or a guarantee (either in whole or in part)? If yes, briefly set out the consequences for accounting and how correct processing in the financial records will be ensured.

Dutch grant is without any repayment obligation or a loan or any equity investment or guarantee.

6. Are there revolving funds? If yes, please explain what will happen to any residual funds, how closure will take place and which agreements should be made.

There is no revolving fund to this grant component.

Audit opinions

- Is an audit opinion required for the activity (see Help)? Briefly explain.

Yes. The amount of funding is above 5 million Euro. The project funding will be audited by an independent external auditor.

- Should the audit opinion be accompanied by an additional auditor's report (for example, on the risks set out above, or on monitoring that the organisation carries out on its prepayments to other organisations)?

External auditor will follow ISA and the audit protocol of the EKN. Any audit observation/finding/recommendations will be reported as an annex to the audit report, in a separate management letter.