The State of Palestine's Nationally Determined Contribution (NDC) implementation plans and policy recommendations: Agriculture – Climate-smart agriculture

Report for the State of Palestine's Environment Quality Authority and the Islamic Development Bank under the NDC Partnership's Climate Action Enhancement Package

.be CLIMATECHANGE.BE
Federal Public Service Public Health and Environment

NDC PARTNERSHIP
ACCELERATING CLIMATE AND DEVELOPMENT ACTION

Environment Quality Authority

IsDB البنك الإسلامي للتنمية
Islamic Development Bank

ED 13581 | Issue Number 3 | 27/08/2021

Customer:

The Palestinian Environment Quality Authority (EQA) and The Islamic Development Bank

Customer reference:

ED13581

Confidentiality, copyright & reproduction:

Contact:

Richard J. Smithers
Ricardo Energy & Environment
Gemini Building, Harwell, Didcot, OX11 0QR, United Kingdom

t: +44 (0) 1235 75 3615
e: richard.smithers@ricardo.com

Ricardo is certificated to ISO9001, ISO14001 and OHSAS18001

Author:

Richard J. Smithers, Afif Hasan, Jamil Harb, Emelia Holdaway, Gratsiela Madzharova, Martha Preater, Islah Jad, Clémence Moinier, Mahmoud Abu-Ebid, Ibtisam Abuhaija

Approved By:

Richard J. Smithers

Date:

27 August 2021

Ricardo Energy & Environment reference:

Ref: ED13581- Issue Number 3

Table of contents

List of abbreviations

List of abbreviations	
CSA	Climate-smart agriculture
EQA	Environment Quality Authority
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GIZ	German Development Cooperation
GCF	Green Climate Fund
INCR	Initial National Communication Report
MoA	Ministry of Agriculture
MoWA	Ministry of Women's Affairs
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
USD	United States Dollar
WFP	World Food Programme

1 Introduction

1.1 Overview

This plan for **"Climate-smart agriculture"** (CSA) is intended to enhance Palestine's opportunities to access climate finance and thereby facilitate successful implementation and delivery of Palestine's Nationally Determined Contribution (NDC). Details of the methodology used to develop this plan are provided in Annex 1.

The plan lays out steps to deliver the following NDC actions that are conditional on being able to secure international funding:

- 50% of farms in the State of Palestine to apply CSA by 2040
- CSA (West Bank)
- Management of crop production systems, including soil and water resources, for better environmental sustainability along with improved economic profitability for farmers (Gaza Strip)

This plan seeks to roll out CSA practices in Palestine by providing training, raising awareness and developing an enabling environment. This is to be achieved through completion of five activities, each contributing to the following target that aligns with the NDC actions:

- 50% of farms in the State of Palestine apply gender-sensitive CSA by 2040

The indicative total cost of achieving this target is 230 million USD. Taking national contributions into account, there is a total funding gap of 218 million USD. Achieving the target will provide considerable adaptation benefits for Palestine by reducing the sensitivity of the agricultural sector to climate change, and may also provide mitigation co-benefits. There is strong government support to undertake these activities, which feature in national and sectoral strategies.

1.2 Geographical scope

Activities in this NDC implementation action plan are an equal priority for the whole of the Occupied Palestinian Territory, i.e. the West Bank, including East Jerusalem, and the Gaza Strip.

2 Relevance of the GCF Country Programme

The Green Climate Fund (GCF) Country Programme includes a funding proposal for "*Scaling up of CSA best practices, innovation and businesses to enhance food security, nutrition and the resilience of vulnerable farmers".*

This is to be achieved through the following five outputs, which are all relevant to this NDC implementation plan:

1. Promote crop diversification and alternative systems (traditional adaptive knowledge, crop land races, agro-biodiversity) to improve agriculture value chain and marketing
2. Promote conservation agriculture best practices (zero and minimum tillage system) and businesses

3. Scaling up sustainable community-managed irrigation schemes, resilient infrastructure and businesses to improve food and water security and resilience of vulnerable communities
4. Enhance the availability and marketing of nutritious and affordable animal feed (including plant and organic residues, drought/heat and salinity varieties) to enhance the resilience of vulnerable livestock farmers
5. Scaling up climate resilient aquaponics system to improve resilience and food security.

All of these outputs represent CSA solutions that may be rolled-out throughout this plan, depending on the outcome of the preliminary studies and on the results of the pilot.

3 Reasons for prioritisation of NDC actions

The three NDC actions that can be implemented through this plan seek to support the development of CSA. National stakeholders scored the relevance and feasibility of these actions based on the extent to which the Government's existing national and sectoral policies, strategies and plans already acknowledge their importance (High = 10, 5, 0 = Low); their adaptation and mitigation benefits (Very positive = 10, 5, 0, -5, -10 = Very negative) and the capacity and technology available to achieve them (High = 5, 2.5, 0 = Low).

The capacity scores reflect that the activities in this plan are not currently being implemented, although this plan aims to increase the capacity available, as necessary, to address constraints. The results are shown in Table 1.

Table 1 Priority scores for NDC actions

NDC actions	Government support	Adaptation benefits	Mitigation benefits	Capacity available	Technology available	**Total**
50% of farms in the State of Palestine to apply CSA by 2040	10	10	2.5	2.5	2.5	**27.5**
CSA (West Bank)	10	10	2.5	2.5	2.5	**27.5**
Management of crop production systems, including soil and water resources, for better environmental sustainability along with improved economic profitability for farmers (Gaza Strip)	10	10	2.5	2.5	2.5	**27.5**

These scores drew upon and are justified by information in the following sub-sections that address each of the priority criteria.

3.1 Government support

The NDC action "50% of farms in the State of Palestine to apply CSA by 2040" is featured in the National Food and Nutrition Security Policy (2019-2030)[1] and in the Agriculture Sector Strategy (2021-2023)[2]. According to stakeholders, the NDC action is not yet fully implemented but inititial steps have been made by MoA and non-governmental organisations (NGOs) to implement climate-smart agriculture solutions (e.g. yellow traps to reduce rates of pesticide application).

The other two NDC actions are also featured in the National Food and Nutrition Security Policy (2019-2030)[3] and the Agriculture Sector Strategy (2021-2023)[4].

3.2 Benefits for adaptation to climate change

Future climate scenarios for Palestine project an increase in temperature and a decrease in average annual rainfall, translating into an increase in the risk of drought. The wettest days may also become more frequent, leading to an increased risk of flood.[5]

These events and slow-onset changes are expected to reduce the quality and quantity of crops that can be grown, and to reduce the agricultural area that can be used. Both impacts would lead to a substantial reduction in food production, which would have negative impacts on the income and employment[6] of Palestinians working along the agricultural value chain, leading to vulnerable parts of society suffering significant losses to their livelihoods. A reduction in the quality and quantity of food products may also lead to adverse health impacts among the population.

Applying CSA through these three NDC actions would reduce the vulnerability of the agriculture sector to climate events by promoting efficient use of resources, shielding products from extreme events and/or using products and inputs that are resistant to new and changing climate conditions. As a result, the NDC actions would have high adaptation benefits, reducing the adverse impacts of climate change on food production and human health.

3.3 Benefits for mitigating climate change

Emissions from the agriculture sector represent around 15% of the State of Palestine's total emissions and are projected to grow proportionally to population growth[6].

---

[1] Text reads: "…mainstream a 'climate-smart' approach to agriculture aiming to sustainably increasing agricultural productivity and incomes, adapting and building resilience to climate change, and reducing greenhouse gas emissions"; "...promote awareness, innovation, capacity development and incentives based on a systematic assessment of expected impacts of climate change".

[2] Text reads: "Natural and agricultural resources are managed in a sustainable way and adapted to climate change."

[3] Text reads: "…Guiding and supporting farmers' initiatives towards intensive and semi-intensive production systems, as well as the application of modern systems of agricultural production in line with the requirements of sustainable development".

[4] Text reads: "… Climate-smart and adaptive, biodiversity protecting, and desertification-combating agricultural policies and technologies are promoted and enforced.". "…The volume of water available to farmers and livestock breeders from traditional and nontraditional sources are increased and managed more efficiently".

[5] State of Palestine Environment Quality Authority (2016). National Adaptation Plan p.109-110. Accessible here.

[6] Initial National Communication Report (INCR)

Although reducing emissions from agriculture is not a specific target of these plans, it can occur as a co-benefit of using resources more efficienty[6]. Hence, all three NDC actions are considered to have small mitigation benefits.

3.4 Capacity available

Knowledge and skills in climate-smart agriculture exist within the MoA, Food and Agriculture Organisation of the United Nations (FAO), NGOs, and universities, particularly in relation to the production of olives, grapes, stone fruits, rain-fed vegetables and field crops.

However, capacity in relation to crop production management in the Gaza Strip specifically is currently limited. Intensive activities (e.g. production of vegetables in greenhouses) still use excessive amounts of agrochemicals, and current programmes do not use better management practices

To complement the existing knowledge and skills of the MoA and its partners, capacity needs to be further developed in the following fields[6]:

- Soil management
- Water conservation
- Sustainable agricultural extension
- Growth of drought- and salt-tolerant crop varieties (new varieties and species may require specific modifications to the crop calendar (e.g. planting and harvesting dates) and to agricultural practices, which will require initial investments in training)[6]
- Intercropping and crop rotation
- Minimum/zero tillage techniques
- Mulching

It is expected that farmers will have the capacity and willingness to receive training and implement new techniques to improve the long-term economic profitability of their activities.

3.5 Technology available

Water harvesting represents a key part of CSA. Traditional water harvesting technology (e.g. stone terrace, cisterns, cement pools, small dams, large ponds, contour ridges, and soil bunds) are already widely used in Palestine.

There are other successful examples of using climate-smart technologes in Palestine, such as bio-digesters for the production of biogas for electricity generation[7].

4 Gender mainstreaming

4.1 Rationale for mainstreaming gender in this plan

The impacts of climate change are not gender neutral[8]. Globally, women and girls are disproportionately affected by the impacts of the climate crisis, as existing vulnerabilities are

[7] Technology Roadmap

[8] Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs) (2019), p.2. Accessible here.

intensified and intersect with a range of social, economic and political inequalities[9]. A business-as-usual approach is likely to exacerbate existing inequalities and limit the opportunities for gender-sensitive and, where appropriate, gender-responsive adaptation actions that may improve gender equality.

At the UNFCCC's 25th Conference of the Parties in 2019 the Enhanced Lima Work Programme on Gender and its gender action plan acknowledged the need for gender mainstreaming through all relevant targets and goals, noting that gender-responsive implementation of climate policy and action can raise ambition, enhance gender equality, and promote a just transition of the workforce[10]. Integrating gender equality into development leads to better outcomes in terms of economic efficiency, productivity and policy choices[11]. Gender responsive solutions can help to tackle poverty and inequality while providing better community representation and technical solutions[12].

4.2 Gender mainstreaming in this plan

All activities and targets under this plan have been reviewed by a team of gender experts, including a representative of Ministry of Women's Affairs (MoWA). Activities identified as "gender-relevant" were devised to ensure that they are at least gender-sensitive[13] and at best gender-transformative[14].

Women in Palestine's agriculture sector represent a large proportion of agricultural workers, but still face gender barriers in implementing climate-smart agriculture practices. This can be due to any combination of the following factors:

- Limited access to land ownership which restricts their decision-making power over agricultural practices
- Limited access to resources and technologies
- Limited time available due to competing roles and responsibilities, including childcare
- Limited understanding of the different barriers women face in the sector, including cultural barriers

This implementation plan addresses these issues in the following ways:

- Defining specific targets that will ensure (i) that the team implementing the activities is gender-balanced and (2) that the groups benefitting from the activities are gender-

[9] Climate change, agriculture and gender in Gaza: Assessing the implications of the climate crisis for smallholder farming and gender within olive and grape value chains in Gaza (2020), p.5. Accessible here.
[10] Report of the Conference of the Parties on its twenty-fifth session, held in Madrid from 2 to 15 December 2019 (2019), p.6-15. Accessible here.
[11] World Development Report 2012 : Gender Equality and Development (2012), p.3-6. Accessible here.
[12] Implementation of gender-responsive climate action in the context of sustainable development (2016), Accessible here.
[13] Gender-sensitive programmes and policies are Level 3 in the WHO Gender Responsive Assessment Scale and is defined as "Considers gender norms, roles and relations; Does not address inequality generated by unequal norms, roles or relations; Indicates gender awareness, although often no remedial action is developed". Accessible here.
[14] Gender-transformative programmes and policies are Level 5 in the WHO Gender Responsive Assessment Scale and is defined as "Considers gender norms, roles and relations for women and men and that these affect access to and control over resources; Considers women's and men's specific needs; Addresses the causes of gender-based health inequities; Includes ways to transform harmful gender norms, roles and relations; The objective is often to promote gender equality; Includes strategies to foster progressive changes in power relationships between women and men" Accessible here.

balanced. The specific target percentages for women's involvement in the activities differ proportionally to their current level of access:

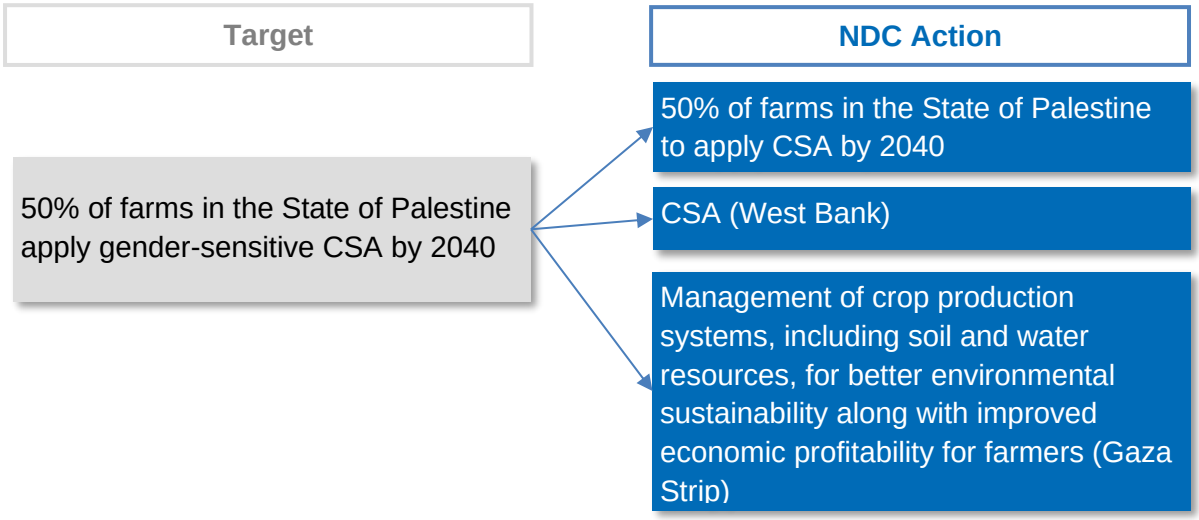
- At least 40% of the members of teams involving government agencies and NGOs should be women. It is expected that women from these organisations will have opportunities to be involved in activities as committee members or to deliver training.
- At least 20% or 30% of individuals receiving training, attending workshops, being consulted or included in field trials should be women. It is expected that female farmers, traders and stakeholders will face some barriers to access trainings due to cultural and economic factors. For example, women farmers may have less opportunities than their male peers to attend training due to childcare responsibilities or limited financial resources.

- Providing childcare support during workshops to remove barriers that women may face due to time constraints and childcare responsibilities.
- Including female extension officers in all activities, to overcome cultural barriers during awareness raising campaigns and allow for more open interactions with other women in the field.
- Disaggregating data collected throughout the implementation of this plan by gender, to highlight gender differences and asses progress.

5 Activities

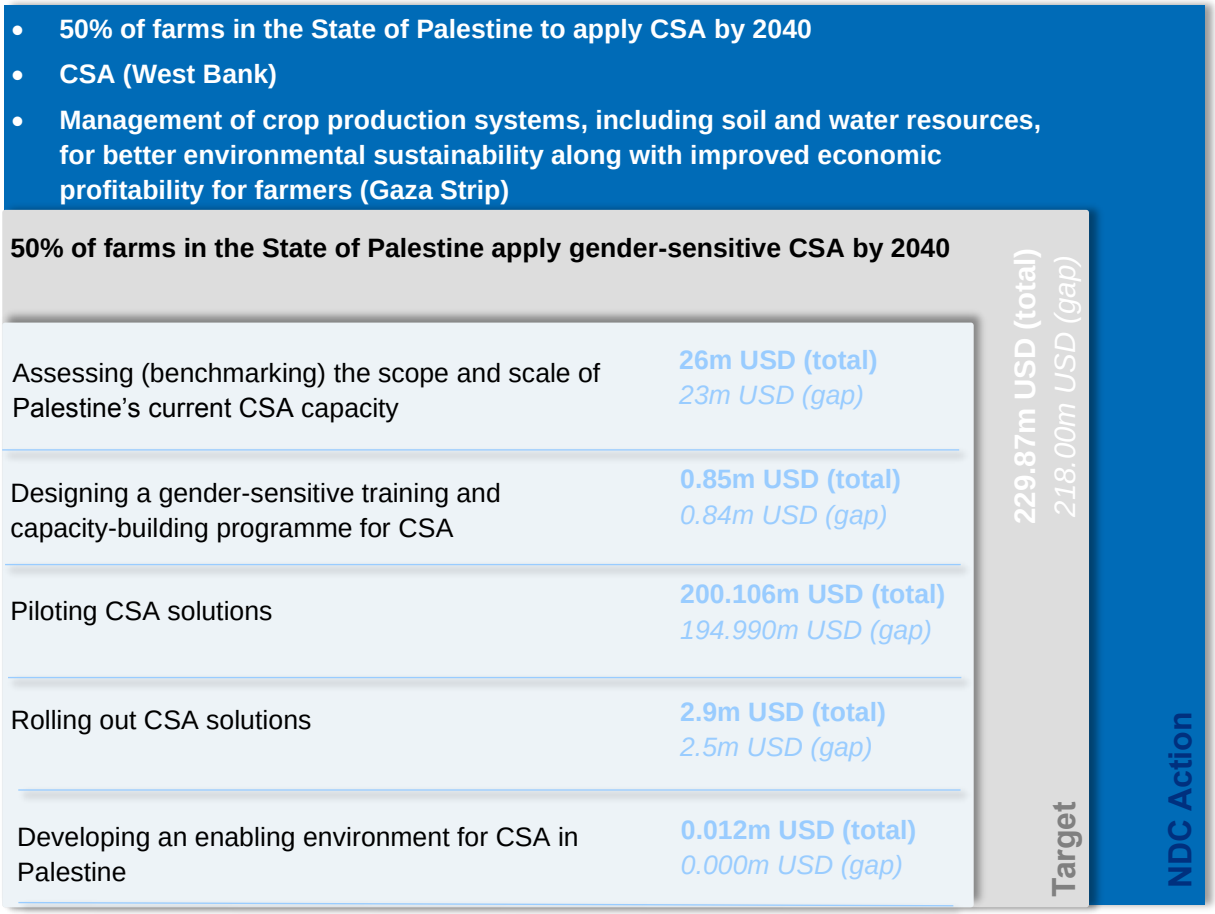
One target was set by national stakeholders to facilitate implementation of this plan and achieve the focal NDC actions, as outlined in Figure 1.

Figure 1 Target for developing CSA



In total, five activities were identified to achieve this target. They are listed in Figure 2. Further details are provided in the subsequent sections.

Figure 2 Summary of activities toward 50% of farms in the State of Palestine to apply CSA by 2040



5.1 Activities to increase the percentage of farms applying CSA by 2040

National stakeholders have identified the specific activities that need to be undertaken to achieve the plan's target. These activities are listed below:

1. **Assessing (benchmarking) the scope and scale of Palestine's current CSA capacity**

   This assessment will be performed along the whole agricultural value chain. It will determine: (1) the extent to which CSA is currently implemented in Palestinian farms; and (2) the extent to which additional resources are needed to roll out CSA solutions throughout Palestine.

a. **Baseline study of existing CSA practices**

   This survey will identify the extent to which CSA is currently being implemented in Palestinian farms and identify existing indigenous knowledge of climate-smart solutions. Findings will be disaggregated by gender and age to identify any potential barriers to CSA that these groups may face.

   Where some CSA solutions are being implemented, the research team will conduct a series of workshops to discuss those technologies, tools and techniques that are worthy of broader adoption. At least 40% of team members and attendees will be

women to ensure gender-specific barriers in implementing these technologies are captured.

b. Baseline study of available human resources

A survey will be conducted to identify potential deficiencies in human resources needed for CSA, and the extent and type of additional capacity needed to effectively implement CSA solutions.

The survey will target the public and private sectors, as well as universities and research centres. Findings will be disaggregated by gender and age to tailor the following activities to the specific needs of each.

2. Designing a gender-sensitive training and capacity-building programme for CSA

This programme will aim to roll out technologies, tools and techniques for CSA throughout Palestine.

a. Identifying appropriate CSA solutions (technologies, tools and techniques)

To develop a context-specific training and capacity-building programme, a research team will identify the most relevant CSA solutions that can be rolled out in Palestine, based on current practices identified in the baseline studies, gaps identified, and other practices implemented internationally which could fill these gaps.

Solutions will address water resource availability, agrochemicals use, losses along the value chain (tomato, cucumber, dates, grapes, avocado, and sweet peppers). This study will involve:

- Establishing research teams, of which at least 40% should be women
- Reviewing available literature and relevant studies
- Selecting the most appropriate technologies, tools and techniques, taking into consideration gendered roles within agriculture
- Undertaking workshops to assess the relevance and feasibility of the selected technologies through consultations with researchers from other countries. At least 40% of team members and attendees should be women.

b. Building the capacity of future trainers in CSA

Once the appropriate CSA solutions have been selected, a capacity building programme for trainers will be designed based on the findings of the “baseline study of available human resources”. The programme will aim to transfer knowledge about the technologies and solutions identified to future trainers, who will subsequently be responsible for delivering training and implementing the CSA solutions locally.

The programme will take into consideration gender roles within agriculture, to ensure training content is tailored to women when required. It will also be delivered to future women trainers, to ensure future trainings can be delivered to women more effectively.

This capacity building programme will involve:

- Selecting researchers from universities and national research institutions and training them as knowledge leaders, empowering them to share information about the selected CSA technologies, tools and techniques. At least 40% of team members will be women.

- Selecting future trainers among MoA, NGOs, and local communities
- Training future trainers in the selected CSA technologies, tools and techniques. At least 40% of team members will be women. The training programme will address:
  - Improving the efficiency of irrigation systems
  - Reducing the usage of agrochemicals
  - Optimising the feeding programmes for livestock
  - Reducing food losses along the food value chain
  - Other CSA issues, as requested by extension services from MoA or NGOs, to remain relevant to Palestinian agriculture's changing needs.

3. Piloting CSA solutions

The selected CSA solutions will first be rolled out to a limited area, which will serve as a pilot to identify whether the selected technologies, tools and techniques identified are performing as expected in Palestine. The pilot area will cover 2,000 hectares of rainfed farmland and 650 hectares of irrigated farmland in the West Bank and 250 hectares of irrigated farmland in the Gaza Strip. The pilot will involve the following sub-activities:

a. Selection of the beneficiaries

MoA will establish technical committees that will be responsible for selecting farmers, traders, and stakeholders to pilot the "new" technologies and tools. They will not be charged for purchasing and using these new technologies and tools. The technical committees will comprise organisations and individuals with appropriate knowledge and experience. At least 40% of the committee members will be women, and at least 20% of the beneficiaries selected should be women.

b. Delivering the tools

Once beneficiaries are selected, the technical committees will be responsible for allocating specific tools to each beneficiary. Tools and technologies will be allocated based on beneficiaries' needs, chances of success and different levels of access due to gender, such as cost barriers[15].

The technical committeess will also supervise the distribution of the CSA tools to the beneficiaries, ensuring that the installation of technologies and tools is performed correctly by suitably-qualified technicians. Tools and technologies to be allocated and distributed include:

- **Irrigation technologies.** Palestine's very limited water resources are a major challenge for sustainable development. Irrigation technologies will help to optimise water consumption and reduce evapotranspiration.
- **Modified machinery.** Machinery is much needed for crop-production (soil preparation, planting of propagules, harvesting, pruning, and sorting and packaging of harvested plant products) and livestock production (to reduce feed losses, and regulate and optimise temperature around animal enclosures).

[15] Although costs-barriers will not be faced during the pilot, this differentiation will still be relevant to ensure that the pilot is representative of real-life circumstances, so that the assessment on the effectiveness of tools is reliable.

All such machinery should be modified to account for the limited access to electricity and limited knowledge of digital technology among farmers. This may involve using manually-powered and/or renewable-energy powered equipment.

- **Weather forecasting and early-warning technologies**. Provision of reliable weather forecasts will be an important factor to ensure that farmers can prepare for weather events. The technology should enable farmers to access early warning, short-term (daily and 10-day), and seasonal forecasts.

  It is also important to monitor weather to ensure that the assessment of the effectivess of CSA solutions is objective. Monitoring weather conditions will enable researchers to decouple the solutions' success and/or failure from potentially favourable/unfavourable weather conditions.

c. Delivering training on the tools

Intensive training courses on the selected CSA technologies, tools and techniques will then be delivered to 25,000 farmers. The training will cover the use of climate services, irrigation techniques and machinery. It will be delivered through various methods such as field visits, hands on training and orientation to ensure the information is accessible to all who need it. At least 30% of those receiving training will be women.

d. Overseeing the implementation

Once the tools have been distributed and the trainings have been provided, the technical committees will oversee the implementation of the CSA solutions. This will involve:

- Establishing a maintenance service to ensure long-lasting functionality of technologies and tools.
- Monitoring the impact of the tools distributed annually.
- Monitoring the impact of each training to estimate the scope and extent of future training needs. Results will be disaggregated by gender to understand the different challenges that men and women may face in implementing the recommendations from the training.

e. Assessing pilot progress and effectiveness

At the end of the pilot, a team of independent researchers from local universities and national research centres, in collaboration with researchers from other countries where appropriate, will assess the performance of the selected CSA solutions in Palestine.

To assist in this assessment, agricultural extension officers from MoA and NGOs will be involved in securing feedback from farmers and other stakeholder that benefit from "new" CSA technologies, tools and techniques.

Findings from the pilot will be disaggregated by gender to ensure that specific challenges in implementing a given CSA solution or in using a tool due to gender can be identified.

4. Rolling out CSA solutions

Depending on the findings from the pilot, CSA solutions will be rolled out across the West Bank and the Gaza Strip. In total, CSA will be implemented on 26,500 hectares of farmland across the West Bank (6,500 hectares irrigated and 20,000 hectares

rainfed, representing 50% of the total farmland) and 2,500 hectares of irrigated farmland in the Gaza Strip (50% of the total irrigated area).

Activities to roll out CSA practices will include awareness-raising and marketing activities. Unlike the beneficiaries from the pilot, for this activity the tools and technologies will need to be purchased by farmers.

a. Awareness campaign and stakeholder engagement to promote CSA

An awareness-raising campaign will be carried out to promote the take-up of CSA solutions that have proved effective during the pilot. The awareness-raising campaign will promote information demonstrating the profitability of CSA across the whole of the value chain.

Delivering this awareness campaign involves:

- Establishing a team to design and supervise the campaign. At least 40% of team members will be women to ensure the material is gender-sensitive.
- Organising field days to demonstrate the benefits of “new” CSA technologies, tools and techniques to stakeholders.
- Preparing “simple” booklets and brochures that describe how to implement selected CSA technologies, tools and techniques. Booklets will apply different methods of disseminating information, using infographics, explanatory figures and diagrams as necessary to ensure that the information is accessible to all potential users regardless of their gender or background.
- Holding seminars and workshops with additional stakeholders. At least 40% of the team of experts and of the attendees should be women.

b. Marketing innovative solutions across the whole of the value chain

It is anticipated that implementation of CSA in Palestine will lead to innovative solutions across the whole of the value chain. Hence, this activity will provide support to those developing these solutions, to allow them to market their solutions locally and more widely.

Gender and age will be taken into consideration when marketing solutions, to use this activity as an opportunity to reduce women’s barriers to employment and address gendered barriers to market access.

5. Developing an enabling environment for CSA in Palestine

To support the development and uptake of CSA solutions in the long term, specific activities will be undertaken to develop an enabling environment that incentivises the uptake of CSA solutions.

a. Updating policies, regulations and institutional arrangements

The National Agriculture Strategy will be reviewed to identify potential inconsistencies and opportunities to update it, so that it reflects the CSA objectives of the NDC. The review will then be extended to any other policies and regulations identified to ensure consistency.

At least 40% of the team reviewing and updating the strategy will be women. The review will take into consideration the gendered roles within agriculture to ensure that the Strategy is at least gender-sensitive and at best gender-transformative.

b. Stakeholder consultation

Following the identification of potential updates and modifications to policies, regulations and institutional arrangements, the proposed amendments will be discussed with stakeholders through a series of workshops and seminars.

At least 40% of the stakeholders consulted will be women to ensure potential challenges related to gender can be identified and addressed.

After the stakeholder consultation, specific recommendations for amendments will be presented to decision makers in relevant government bodies.

6 Timeframes, indicative costs, existing funding and likely sources of funding

For each of the activities, Table 2 (below) identifies:

- The indicative implementation period for each activity and sub-activity;
- Indicative costs for each activity and sub-activity;
- National contributions to each activity and sub-activity, where relevant;
- Existing international funding per activity and sub-activity, where relevant;
- Any remaining funding gap; and
- Potential international public funding sources that were preliminarily identified as potential support to address the funding gap. Note that international funders' priorities are subject to change and negotiation.

7 Institutional arrangements

Figure 3 (below) sets out the institutional arrangements for implementing this plan. The Ministry of Agriculture (MoA) was identified as the lead organisation for a cross-ministerial Project Steering Committee (and intended to be the main contact point with international public funders), as well as project delivery partners and other project stakeholders. The organisations involved will be specific to the activities, as relevant to their interests and may change over time. The committee should also aim for equal gender representation to encourage gender mainstreaming throughout plans and activities.

It will be of key importance for MoA to allocate appropriate financial and administrative resources and clearly secure internal ownership of each activity in the implementation plan. This way, MoA can ensure that the implementation plan is delivered, and the Project Steering Committee is functional, delivering the activities to achieve the targets of the plan while adhering to timescales.

8 Recommendations for an enabling environment

The successful delivery of this plan will be ensured by developing a supportive enabling environment where it does not yet exist. This may include updating or developing legislation, regulations, statutory guidance (and standards), national or sectoral policies and strategies, and incentives (including fiscal measures) that would contribute to ensure the successful implementation of the activities or remove potential barriers to implementation.

Key recommendations for development of the enabling environment to support the implementation of this plan identified by national stakeholders that will be given further consideration include:

- **Palestine's Environment Law Amendment** that is yet to be enacted **should be used as an enabling context** for the development of the legislation, regulation, statutory guidance, policies, strategies or incentives that are relevant to this plan
- **Updating bylaws and regulations with added articles to support CSA.** There are currently no articles within the law related to CSA. However, some bylaws and articles of regulations address environmental challenges within their objectives. Such bylaws and regulations can be updated by adding specific articles supporting CSA solutions. For example, the MoA with the Ministry of Finance has added an article that ensures the refund of the VAT to animal and plant production farmers that implement CSA. This is dependent of the availability of funds, and 25% of the refunded tax will be deducted for the benefit of PADRRIFF (Palestinian Disaster Risk Reduction and Insurance Fund).
- **Developing regulations for employers** to ensure that awareness-raising and training activities are included within the terms of their employment, so that individuals are paid to attend during working hours. This will improve women's access to such activities by addressing the time and economic constraints that they face. Implementing this recommendation requires securing formal Cabinet approval.
- **Developing a policy that enables and facilitates public-private partnerships** for the delivery of programmes that provide public benefits. In the case of this plan, this could enable wider promotion of the awareness-raising materials produced by the MoA by allowing them to engage with the media. The Ministry of Welfare can be responsible for taking forward this recommendation and securing formal Cabinet approval.
- **Developing regulations and statutory guidelines to enforce gender budgeting,** i.e. analysing all budget lines and financial instruments for climate change adaptation and mitigation from a gender perspective, to ensure gender-sensitive or gender-transformative investments in relevant programmes (e.g. addressing technology transfer and capacity building), such as this plan. The MoWA can be responsible for taking forward this recommendation and securing formal Cabinet approval.

9 Challenges for implementation

Israeli control over Palestinian territories is no impediment to the implementation of this plan. Palestine's unique geo-political situation since 1995 means that the MoA and its delivery partners have adapted to the requirements and restrictions enforced by Israel's various levels of control and occupation across the West Bank and the Gaza Strip[16]. Efficient

[16] Palestine constitutes the Occupied Palestinian Territory, which is made up of the West Bank (including East Jerusalem) and the Gaza Strip, based on the borders of June 1967 and are separated by Israel, the occupying power. The Oslo II Accord, formally entitled the 'Interim Agreement on the West Bank and the Gaza Strip of 1995', created three territorial zones in The West Bank: Area A, where the Palestinian Government has responsibility for public order and internal security; Area B, where the Palestinian Government assumes

decision-making and implementing structures have been developed to circumvent restrictions, including by communicating with the Israeli authorities.

Over the years, the MoA has worked with a range of international development partners, including the FAO, the Belgian Government, the European Union (EU), and the Islamic Development Bank. In doing so, it has assisted them to navigate the administrative procedures required to ensure that programmes can be successfully implemented.

Regarding this plan for implementing climate-smart agriculture, constraints arising from Israel's occupation could include land confiscation, restrictions on digging wells for irrigation, and barriers to land reclamation and rehabilitation. These challenges have been considered when developing this plan with MoA, such that activities focus on building upon existing capacities rather than expanding the infrastructure or land. The selection of CSA solutions to be rolled out will also account for those potential challenges to ensure that only practical interventions are implemented.

Farmers may also be wedded to traditional agricultural practices and become resistant to implementing "new" CSA technologies. Such cultural challenges may be reinforced where CSA requires access to land, water, technologies or tools that are challenging to access in the Palestinian context7. The extensive awareness-raising programme and offer to market farmers' innovative solutions along the value chain aim to overcome this challenge.

responsibility for public order for Palestinians, while Israel controls internal security; and Area C, where Israel maintains exclusive control.

Table 2 Timeframes, indicative costs, existing funding (USD million) and likely sources of funding

Activity	2020 - 2025	2026 - 2030	2031 - 2040	Unit cost	No. units	Unit type	Total cost	National contribution [17]	International funding	Funding gap	Indicative options to secure international public funding to address funding gaps
1.a				0.0020	2,900.00[18]	Hectares	23.000	0	0	23.00	FAO (CSA is a priority)
1.b				0.0003	10,000.00	Farmers/ trainees	3.000	3.000	0	0	EU (Agriculture is a priority)
2.a.				0.0004	25.00	Working days	0.010	0.010	0	0	Belgium (CSA is strongly aligned with priorities)
2.b.				0.0007	1,200.00	Training days	0.840	0	0	0.84	GIZ (for small-scale infrastructure in West Bank that supports agricultural productivity)
3.a.				0.002[19]	2,900.00[18]	Hectares	5.800	0	0	5.800	
3.b.				0.062[20]	2,900.00	Hectares	179.8	0	3.00[21]	176.8	
3.c.				0.0003	20.00	Working days	0.006	0.006	0	0	
3.d.				0.0080	2,900.00	Hectares	8.700	0	5.11[22,23]	3.59	

[17] Transportation, arrangements, communications

[18] Hectares (10% will serve as piloting and demonstration sites; 2,000 hectares rainfed + 650 hectares irrigated in West Bank; + 250 hectares irrigated in the Gaza Strip)

[19] Capacity building (NAP prioritisation)

[20] Capacity building

[21] Awarded since 2017: USD 3m, Integrated Rural Development Project in Marj Sanour, Funder: Arab Authority for Agricultural Investment and Development (AAAID) - Islamic Development Bank, Implementor: MoA
Submitted application: USD 3.8m Land Development and Sustainable Agriculture Practices in Palestine, Funder: European Commission,
Implementor: Consortium of six Palestinian NGOs

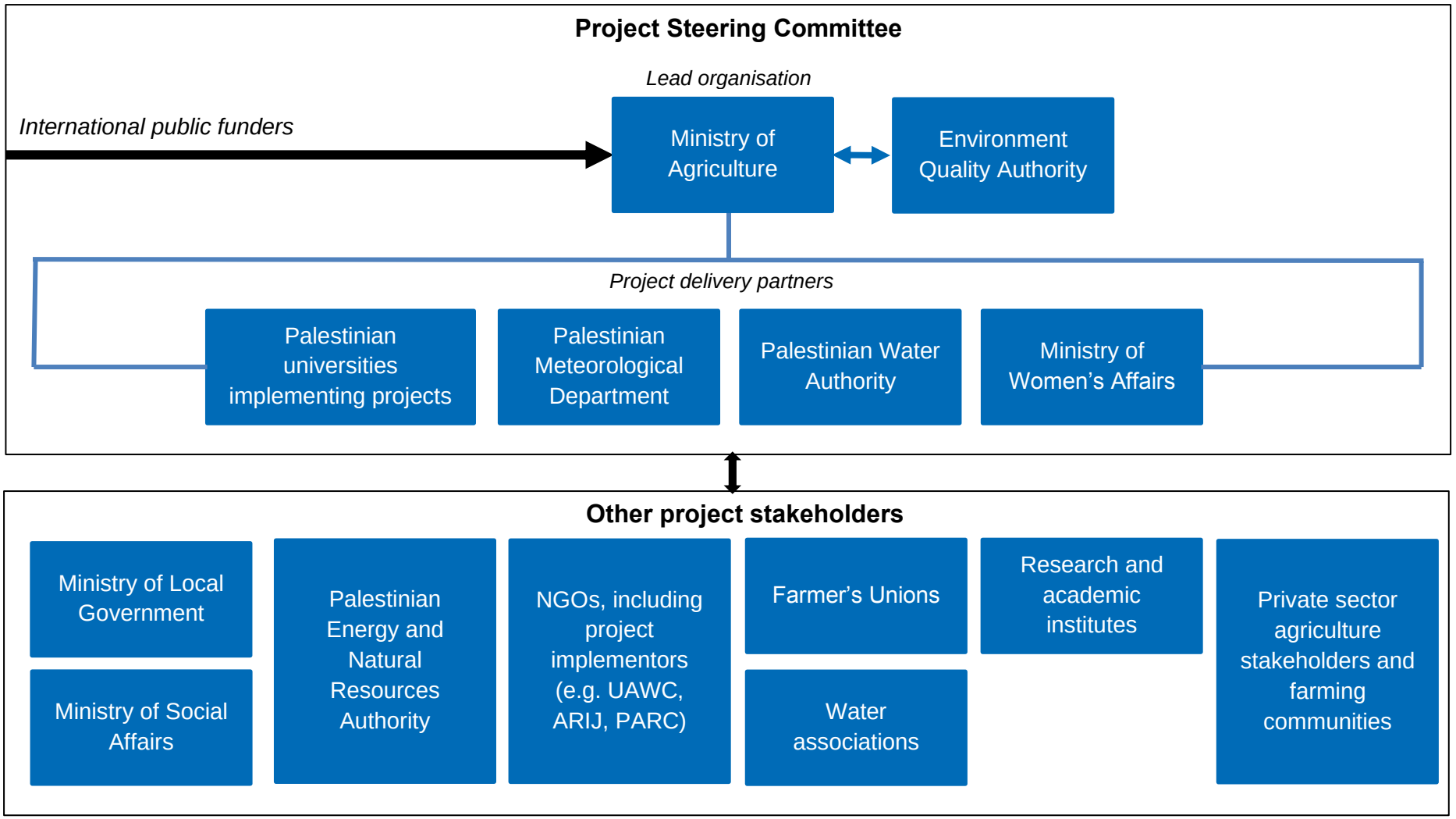
[22] Awarded since 2017: USD 2.11m Greening Palestinian Economy: Compost factories at large scale, Funder: European Union, Implementor: Agricultural Development Association (PARC) and Italian Association for Women in Development - Associazione italiana donne per lo sviluppo (AIDOS).
Submitted USD 8m, Low carbon olive value chain development in Palestine, Funder: Selected by the NAMA for the Detailed Project Proposal phase, Implementor: Ministry of Agriculture

[23] Awarded since 2017: Crop production and land use, Funder: Sida, Amenca, ACPP, Implementory: Agricultural Development Association)

Activity	2020 - 2025	2026 - 2030	2031 - 2040	Unit cost	No. units	Unit type	Total cost	National contribution [17]	International funding	Funding gap	Indicative options to secure international public funding to address funding gaps
3.e.				0.002[24]	2,900.00[25]	Hectares	5.800	0	0	5.800	WFP (for food from hydroponics, especially in Gaza is a priority)
4.a.				0.0004	1,000.00[26]	Days	0.400	0.400	0	0	
4.b.				0.010[27]	250.00[28]	Hectares	2.500	0	0	2.50	
5.a.				0.0020	15.00[29]	Project activities	0.006	0.006	0	0	
5.b.				0.0020	15.00[30]	Project activities	0.006	0.006	0	0	
TOTAL							**229.87**	**3.428**	**8.11**	**218.002[30]**	

[24] Capacity building (NAP prioritisation)
[25] Hectares (10% will serve as piloting and demonstration sites; 2,000 hectares rainfed + 650 hectares irrigated in the West Bank; + 250 hectares irrigated in the Gaza Strip)
[26] Number of days for seminars, workshops, and field days
[27] Information provided by national stakeholders based on the Technology Roadmap and GCF Country Programme and former project cost estimates
[28] Hectares (10% will serve as piloting and demonstration sites; 250 hectares irrigated in the Gaza Strip).
[29] Transportation, arrangements, communications
[30] Total funding gap is subject to rounding errors

Figure 3 Institutional arrangements for implementation



The Gemini Building
Fermi Avenue
Harwell
Didcot
Oxfordshire
OX11 0QR
United Kingdom
t: +44 (0)1235 753000
e: enquiry@ricardo.com

ee.ricardo.com

STATE OF PALESTINE

MINISTRY OF AGRICULTURE

Minister's Bureau

دولـة فلسـطين

وزارة الزراعـة

ديـــوان الوزيـــر

Excellency Mr. Jameel Mtour

Chairman

Environment Quality Authority

Subject: Endorsement of the NDC Implementation Plans in the Agricultural Sector

The Ministry of Agriculture sends you best regards and wishes you good health in these difficult days of COVID 19, and would like to thank the EQA for the extended and continued efforts to protect the Palestinian Environment.

Reference is made to the subject and to your kind request for an endorsement letter, and in my capacity as Minister of Agriculture, this is to confirm that the Ministry of Agriculture fully endorse the NDC Implementation Plans for the Agricultural Sector, that was prepared jointly with the Ministry of Agriculture, Environment Quality Authority, and the National Committee for Climate Change and key stakeholders as part of the project implemented by Environment Quality Authority and NDC Partnership and funded by the Islamic Development Banks with an estimated budget as follows:

1. Climate Smart Agriculture with estimated Budget 229.87 Million Dollars.
2. Climate Resilient Land Planning and Management with estimated Budget 718.3 Million Dollars

I would like to reiterate that this plan is in conformity with the National Priorities in the Agricultural sector and the agricultural sector strategy update for the years 2021 – 2023.

With all due respect,

Riyad ATTARI

Minister of Agriculture

دولة فلسطين
ديوان الوزير
31 -03- 2021
صادر رقم 2038

cc.: Deputy Minister
Assistant Deputy Minister for Administration and Planning
DG. Planning and Policies
DG of Agricultural Water

STATE OF PALESTINE

MINISTRY OF AGRICULTURE

Minister's Bureau

دولـة فلسـطين

وزارة الزراعـة

ديـــوان الوزيـــر

عطوفة الأخ جميل مطور حفظه الله

رئيس سلطة جودة البيئة

الموضوع: اعتماد خطط العمل لتنفيذ المساهمات المحددة وطنيا في قطاع الزراعة

Subject: Endorsement of NDC Implementation Plans In Agricultural Sector

تحية طيبة وبعد.....

تهديكم وزارة الزراعة أطيب التحيات وتتمنى لكم موفور الصحة والعافية وتتقدم لكم بجزيل الشكر على جهودكم الموصولة والهادفة لحماية البيئة الفلسطينية، بالإشارة إلى الموضوع أعلاه وبناء على طلبكم يرجى العلم بأن وزارة الزراعة **تؤيد وتدعم خطط العمل لتنفيذ المساهمات المحددة وطنيا** والتي تم إعدادها بالتنسيق والتعاون ما بين وزارة الزراعة و سلطة جودة البيئة وأعضاء اللجنة الوطنية لتغير المناخ والشركاء ذوي العلاقة وذلك ضمن نشاطات المشروع المنفذ من قبل سلطة جودة البيئة وشراكة المساهمات المحددة وطنيا وبدعم من البنك الاسلامي للتنمية، وذلك بموازنة تقديرية على النحو التالي:

1. Climate Smart Agriculture وبكلفة تقديرية 229.87 مليون دولار
2. Climate- Resilient land Planning and Management وبكلفة تقديرية 718.3 مليون دولار

مع العلم بان هذه الخطط تأتي متوافقة مع الاولويات الوطنية في القطاع الزراعي، واستراتيجية القطاع الزراعي المحدثة للأعوام 2021 – 2023.

وتقبلوا فائق التقدير والاحترام

ريـــاض عطـاري

وزيـــر الزراعـــة

دولة فلسطين
ديوان الوزير
31 -08- 2021
2039
صادر رقم

نسخة
عطوفة الأخ الوكيل
الأخ وكيل مساعد الإدارة والتخطيط
الأخ مدير عام التخطيط والسياسات
الأخ مدير عام المياه الزراعية والري