Syrian Arab Republic

The Ministry of State for Environmental Affairs

NDE-CTCN

The safety of the atmosphere

Climate Change Department

Eng. Ammar Abbas

Request Submission Form for CTCN Technical Assistance (version 1.0 - January 2014)

Technology Needs Assessment for Climate Change in Syria

APPLICANT/CONTACT:

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COUNTRY: *Syrian Arab Republic*

TITLE: *Technology Needs Assessment for Climate Change in Syria*

GEOGRAPHICAL FOCUS: *{Select the most relevant geographical level}*

☐ *Community-based* ☐ *Sub-national* ✓ *National* ☐ *Multi-country*

{If sub-national or multi-country level, please indicate here the concerned areas (provinces, states, countries, regions, etc.)

SECTOR/THEME *{Select the most relevant sector}*

Mitigation:

- ✓ *Energy*
- ✓ *Transport*
- ✓ *Industry*
- ✓ *Agriculture*
- ✓ *Forestry*
- ✓ *Waste*
- *Cross-sectoral*

Adaptation:

- ✓ *Early Warning/ Disaster Reduction*
- ✓ *Agriculture/Fisheries*
- ✓ *Forestry*
- ✓ *Water Resources*
- *Coastal Zones/Oceans*
- *Terrestrial Ecosystems*
- ✓ *Human Health*
- *Infrastructure/Human Settlement*
- *Tourism*
- ✓ *Businesses*
- ✓ *Education*
- *Cross-sectoral*

PROBLEM STATEMENT (up to half a page)

the Syrian Arab Republic (SAR) will be one of the state's most affected by the potential impact of climate change due Being an arid and semi-arid country . A preliminary assessment reveals nationwide changes in rainfall patterns and fluctuations in temperature during the past five decades. Average annual rainfall has fallen dramatically in the main agricultural areas over the past years. As a result, the country has suffered from a lack of rain and the prolonged effects of drought.

Based on the abovementioned facts and on preventive principles, Syria has been concerned about issues of climate change and dealing with its causes and consequences, within the framework of global equity and mutual but distinctive responsibilities.

The current problem is how to Evaluate the mitigation technologies needed, and adaptation technologies needed? and how to select technologies which are suitable for the economic and environmental circumstances in Syria.

DEVELOPMENT OF THE REQUEST (up to half a page)

{Explain how the request was developed at the national level and the process used by NDE to approve before submitting it (who was the lead organization, who were the stakeholders and what were their roles, and describe any meetings or other consultations that took place to develop and select this request).}

ASSISTANCE REQUESTED (up to one page)

aims at assisting Syria in identifying and analyzing priority technology needs to mitigate GHG emissions and reduce the vulnerability of sectors and livelihoods to the adverse impacts of climate change and to form the basis for a portfolio of Environmentally Sound Technology projects and programmes.

The main objectives of the project are:

• To identify and prioritize through country-driven participatory processes, technologies that can contribute to mitigation and adaptation goals of Syria, while meeting the national sustainable development goals and priorities;

• To identify barriers hindering the acquisition, deployment, and diffusion of prioritized technologies;

• To develop Technology Action Plans (TAP) specifying activities and enabling frameworks to overcome the barriers and facilitate the transfer, adoption, and diffusion of selected technologies in Syria;

• To develop proposals/concept notes for selected technologies in prospect for future funding.

ALIGNMENT WITH NATIONAL PRIORITIES (up to half a page)

The Technology Needs Assessment project is being undertaken to introduce technologies that could improve Syria's developmental and environmental integrity.

The main objective is to identify and assess environmentally sound technologies that have synergies between reducing the impact of climate change and the rate of GHG emissions and Syria's national development objectives. The resulting Technology Needs Assessment and Technology Action Plan report will be used to:

- *Identify a portfolio of technologies that have the potential to combat climate change, reduce environmental pollution, and contribute to Syria's sustainable development*
- *Communicate Syria's climate change technology requirements to the global community*
- *Facilitate the access to international sources of funding for the implementation of mitigation and adaptation activities*
- *Support Lebanon's position in climate change negotiations in the area of technology transfer*

PAST AND ONGOING EFFORTS (up to half a page)

Syria ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1996 by virtue of Law 363, with a primary objective of achieving the stabilization of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic activities from interfering with the climate system.

Syria has submitted its Initial National Communication (INC) in 2010 ,and now Syria is preparing Second National Communication (SNC), This project comes to complement all the efforts the government of Syria is undertaking to combat climate change and aims at providing new and additional information that responds to concerns, generates new findings for policy reform and shapes action plans for intervention.

EXPECTED BENEFITS (up to half a page)

• Select the priority for several proposal technologies.
•Accelerate Innovation and expansion of technologies, by classify and select assistance activities which develop and support capacity building and enabling activities.
• Develop national and technical and sectional strategies' for getting Advanced
• technologies and spread it.
• Prepare report about the assessment results, it is contain the information related to technologies which have the most priority, then inform the Private sector which includes Technology providers and project developers, in order to Cooperate in spread technologies.
• involvement the appropriate team of stakeholders to contribute inputs to evaluation process, and develop a varied and consistent group which consist of stakeholders in the Private and public sector in order to deal with technology transfer issues.
• Select and Describe strategic and sectors for assessment process.
• Selection and definition the sustainable low emission technologies which adapted to sustainable needs.

EXPECTED TIME FRAME

Two years

KEY STAKEHOLDERS

Stakeholder	Role in the response
Ministry of State for Environment Affairs	
Ministry of Energy	
Ministry of Finance	
Ministry of Agriculture	
Ministry of Transport	
Ministry of health	
Ministry of Higher Education	
Ministry of Education	

MONITORING AND EVALUATION

✓ By signing this request, I affirm that processes are in place in the country to monitor and evaluate the assistance provided by the CTCN.

✓ I understand that these processes will be explicitly identified in the Response Plan in collaboration with the CTC, and that they will be used in the country to monitor the implementation of the CTCN assistance.

"Determination Technological Needs to Face Obstacles of Wheat Growing Related to Climate Change in Syria"

PROBLEM STATEMENT (up to half a page)

Since the 1980s Syria was able to become self-sufficient and move from being a food importer to an exporting country for some products and agricultural crops, especially strategic ones such as wheat, barley, cotton, vegetables and fruits. Since the 1970s the surplus of agricultural production (wheat, vegetables and fruits) is exported with a focus on relatively advantageous agricultural and industrial non-oil exports, including olive oil, wheat, animal and plants production, textiles and ready-made clothes. Syria cannot be separated from what is happening to the rest of the world.

As the main constraint of wheat production in Syria is drought, climate change has negative impact on Syrian wheat yield due to reducing precipitation and changing distribution, high temperature especially during flowering, grain filling period, frost and frost duration especially during germination, as well as it had negative effects on irrigation sources, both water quality and quantities, for which different management approaches are needed.

DEVELOPMENT OF THE REQUEST (up to half a page)

In general, the project designed to improve drought tolerant cultivars adapted to Syrian environment, and very important to develop our methods to screen the introduce genotypes for using these genotypes as a parents in national hybridization program or to release them throughout Syria. The request was prioritized and developed through a participatory and inclusive process involving key stakeholders through series of meting and consulting.

From this respect, convinced financial partners, as well as stockholders for sound participating. The project will contribute to strengthening institutional capacity to provide sound information & data on adapting with Climate Change for formulating rational policies as well as agricultural production planning and strategies for improved food security and safe environment, by using simulation programs, finally the data obtained together with using of some genotypes (landraces and released varieties), and some varieties as hybrid parents in breeding programs which well selected according to following parameters:

1. *morphological parameters (peduncle length, flag leaf area, leaf area, …ect.)*
2. *Physiological Parameters, Salinity Susceptibility Index, Membrane Integrity, water content, Leaf Dry Matter Ratio)*
3. *Biochemical parameters (proline content)*
4. *Quantitative Parameters(number of grains per spike, plant)and 1000 kernal weight.*
5. *determination the critical threshold for stress tolerance to identify the critical stages in wheat*

ASSISTANCE REQUESTED (up to one page)

This request seeks to address the obstacles issues of wheat production in Syria related to Global Environment change through infrastructures and an enabling financing and institutional mechanism. The CTCN will provide assistance in targeted small experimental wheat growing plots, to be used as pilot areas. It is expected that the CTCN will help to identify an adapted enabling framework to manage wheat technical adaptation with climate change and, to provide policy counseling for local appropriation and dissemination of such technologies. This technical assessment and policy assistance will enable Syria to develop new line and varieties of wheat adapted with the recent consequences of climate change. CTCN support will include the experiences transfer, the capacity building of researcher staff, laboratory experiences exchanging, data collection, data possessing, lines and varieties exchanging, building sound data base, varieties collection and storage ,empirical scenario building, prediction future scenarios. An enabling financial and institutional environment will be set up and run properly to foster the dissemination of such obstacles of wheat growing and to assist of selection new adapted wheat variants to be released to local farmers in Syria and beyond. In order to implement such project in a sustained manner, some software, equipment, data, training, experiences sharing will be wisely used to enabling Syria to stay self-

sufficient of wheat crops in spite of Global Environment Change.

ALIGNMENT WITH NATIONAL PRIORITIES (up to half a page)

In order to overcome bottlenecks facing wheat growing in Syria, General Commission for Scientific Agricultural Research (GCSAR) has been actively running many efforts to leverage the negative impact of Global Environment Change on agriculture sectors, GCSAR has breeding program which had a highly significant role in crop improvement and the increased yield by releasing the improved-high yielding- well adapted cultivars. The main methods that have been used to achieve this are:

Selection: Syria has a very important Landraces of wheat, these old naturally selected varieties are not pure lines but are populations of many different- highly identical lines. Having done selection within these rich populations

Hybridization: Hundreds new genotypes are created by the national hybridization program of wheat annually and multi-location selection during the segregation generations has been done to reach finally the best pure lines after 5-7 generations.

some of varieties has been released in GCSAR as Cham1, Cham 5, Douma1(Durum wheat) and Douma2, Douma4(bread wheat) that can planted in zone B because of its tolerant for drought.

EXPECTED BENEFITS (up to half a page)

An effective implementation committee and technical working groups, for improved coordination among relevant Government & Regional institutes and all stakeholders on matters related to Global Environment Change (GEC) and wheat adaptation with climate change

Well-qualified and equipped units of the GCSAR in the collection, storage, analysis & dissemination of crucial data on climate change that are needed for rational planning and policy formulation.

Comprehensive Database, on the basis of up-to-date technologies and methodologies, aiming at sustainable land resources plans.

New lines/ or variants tolerated to climate change .

EXPECTED TIME FRAME

The assistance could be implemented in 4 years and the activities will be implemented as indicated on the following table:

Table: Timelines for the Integrated Project

Description	Year 1				Year 2				Year 3				Year 4			
	I	II	III	IIII	I	II	III	IIII	I	II	III	IIII	I	II	III	IIII
Advisory &coordination committee																
Technical working groups																
Data collection and storage																
Establishment of comprehensive data base																
Data processing																

KEY STAKEHOLDERS

Stakeholder	Role in the response
Ministry of State for Environmental Affairs	
Ministry of Agriculture and Agrarian Reform MAAR	
International Center for Agricultural Research in the Dry Areas(ICARDA)	Lines and varieties exchange, data collection, data processing, training staff, consulting
Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD)	Lines and varieties exchange, data collection, data processing, training staff

MONITORING AND EVALUATION

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Questions from CTCN

We understand that the request is asking support for (i) data collection and information on droughts resistant crops and (ii) identifying an enabling framework and policies to facilitate dissemination of these crops. It also mentions the strengthening of researchers' capacities. This is indeed in line with CTCN mandate but needs to be more targeted and specific given the scope of CTCN technical assistance. We also need to take into account the current situation in Syria and understand what kind of support the CTCN can provide that would trigger some sort of impacts (i.e**. How will the results or outputs of the CTCN assistance be used? By who?).**

Building on previous and current efforts: The request mentions important efforts at national level, conducted by the GCSAR which has run significant work in this area (crop identification, capacity building, etc.). **Projects with the CIMMYT, ICARDA and ACSAD are also mentioned. In the current situation are there still activities ongoing within these initiatives?**

How will the CTCN assistance complement these existing efforts?

Is support needed to scale-up the existing efforts?

Potential financiers: The request mentions convinced financial partners. **Who are they? What do they want to fund?**

Duration: Since CTCN is mandated to provide targeted technical assistance and cannot support fully-fledge projects. We generally target activities of a duration up to 1 year or so.

Expert assistance: Note that given the current situation in the Syrian Arab Republic, the CTCN may only be able to provide desk-support for now, since it may be too difficult and costly to deploy some experts in the country.

Request applicant: **Did the request idea come from the NDE office?** If it was developed by or with another institution or department, please also insert the name, organization and contact information of the applicant, in addition to the NDE information.

Answer from NDE

Regarding to Building on previous and current efforts: GCSAR still working with some national and international scientific organizations, for example here some projects still going with IACRDA, ACSAD, CIMMYT:

-Biodiversity &Integrated Gen Management Program (BIGMP)-ICARDA Durum Improvement Program Central and West Asia and North Africa (CWANA) (on going with ICARDA)

-38 th International Durum Yield Trial Mediterranean Dryland (38 th IDYT-MD 2014-2015)The International Durum Observation Nurseries (IDON-2015MDryland) and Yield Trials (IDYT-12) and Durum Segregating Populations for the Mediterranean Dryland (IDSP-2015MDryland) comprise genetic material for Mediterranean Continental, Temperate, and High Altitude Areas. (on going)

-Spring bread wheat germplasm, Durum wheat pools and special nurseries include lines with resistance or tolerance to specific diseases, pests, combination of diseases/pests, or with specific characteristics, with ICAEAD, ACSAD, CIMMYT. (on going with ICARDA, ACSAD)

-Food Enhancing Security Project in Arab Countries (wheat in Syria) (on going with ICARDA)

Regarding to OUR NEEDS:

-Technical and scientific supports in Co-supervise pH-D dissertations in the field of (CropSyst) programming (soft and durum wheat)

-Technical and scientific supports in execute researches to assets the wheat biophysical yield gap in Syria

-Technical and scientific supports in execute researches in the field of wheat crop monitoring and yield prediction using early warning and remote sensing

-Technical and scientific supports to execute special researches in drought early warning

-Technical and scientific supports to establish Decision support system (DSS) for wheat in Syria

-Technical and scientific supports to mitigate the effect of climate change on wheat yield by release new variants (excite experiments on wheat stress – water deficit, water scarcity, low water qualities, thermal stress, water and thermal stress during maturity stage

The request idea was come from General Commission for Scientfic Agricultural Research (GCAR), namely :

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Potential Finance: we are seeking support through some organization related to climate change mitigation (we need also your support and efforts to facilitate our request)

Thank you