



THE AGRICULTURAL DEVELOPMENT ASSOCIATION

PARC-GAZA

A Project Proposal For

Developing Alternatives for preserving water resources in the Gaza Strip

Submitted to:

AMFP/France

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Introduction:

The hasten population density in the Gaza strip is reaching the top within the world against the limited available water resources; meanwhile in the coming century, climate change and a growing imbalance among freshwater supply, consumption, and population growth will alter the water cycle dramatically. The Palestinian regions are already limited by the amount and quality of available water especially in the Gaza Strip as the Palestinian water authority reported that the amount of available water for human uses, industry and agriculture is 100 million m³ (20-25 million m³ pumped to Gaza via Israel, and the rest via 7200 agricultural wells); knowing that the agricultural sector needs 80 million m³ Which means the available water in the Gaza strip is not sufficient to cover Gaza needs of water.

The Gaza Strip is approximately 365 square kilometers in area, some 41km in length and 7-12 km in width. Its western border is the Mediterranean Sea, with Egypt on its southern border, and Israel to the east and north; this narrow band of semi-arid land a population of over 1.5 million Palestinians reside. The Strip is located on the western-most edge of the shallow coastal aquifer that is exploited for municipal and agricultural water supply for Gaza and southwest Israel.

Gaza Strip relies mainly on underground water (coastal aquifer) to fulfill all needs, where the safe yield of the aquifer is about 60-65 Mm³ every year, and this leads to a total deficit of 95-100 Mm³/year

In the next 30 years alone, accessible surplus of water is unlikely to increase more than 10%, but the population is projected to rise by approximately one-third. Unless the efficiency of water use rises, this imbalance will reduce freshwater ecosystem services, increase the number of aquatic species facing extinction, the growing demands on freshwater resources create an urgent need to link research with improved water management.

Nowadays water is declining and forms a threaten to the life in Gaza strip due to the shortage in the quantities of rainfall which constitute the main source of underground water and the construction of the Israeli illegal water traps that is siphoning water supplies from the aquifer before they reach the Gaza Strip ; meanwhile the demand of water increased compared with the progress of urbanization the Gaza Strip that the population increased about 4% yearly regarding to the Palestinian Central Bureau of statistics; on the other hand the agricultural sector suffers from water deterioration which affects the sustainability of this sector and affects its development and reduce the quantity and quality of production which lead to create obstacles in achieving the food security.

Therefore, the problem of water today is one of the most significant problems facing the people of the Gaza Strip besides several factors gathered imposing many water risks, including excessive consumption , the different Israeli actions such as damaging a huge number wells in the Gaza strip 350 well (330 well were Rehabilitate, 20 couldn't reached); in response to the high demand for enhancing food security in the Gaza Strip and land productivity; there is a bad need to search for other alternatives and invest all the available resources in order to preserve water resources in the Gaza strip and rationalize its use.

The project Idea:

The residents of the Gaza Strip and the farmers in particular; suffer from an acute shortage of water which affects negatively and directly their daily lives meanwhile the agricultural production quality and quantity decreased which means the farmers livelihoods will be affected; in response to these risks, the attention should be directed towards quick solutions to maintain the agricultural sector and prevent the collapse of the alleged water and from the concept of enhancing the food security; Since the underground water is the only source that covers the agricultural needs; farmers have to use their water wisely through adopting new irrigation strategies and tools to help stop irresponsible consumption of water, in addition to that introducing new techniques that helps to provide an additional source of water which will be through adopting rain water harvest systems and collecting the rain water from the top the green houses roof; this water will be collected in a concrete water pools in order to provide the farmers with a clean and sustainable source of water at least during winter also the water collecting pools can be used in the summer to store the water when the water supply is irregular therefore; the perspective of the project is embodied simply in harvesting the rain water and rationalizing the consumption of water by two main interventions to: 1) build concrete water pools and connecting these pools with water harvest systems of the greenhouses, and 2) provide poor farmers with the necessary tools and equipment for the installation and maintenance of water pipes, irrigation networks and providing the means for increasing the efficiency of the irrigation networks and reducing the losses in the pumped water. As similar intervention plays a key role in contributing to the provision of possible greater amounts of water that would be able ensure the good agricultural practices to produce products with high qualities and quantities with the aim of achieving food security and enhancing the poor farmers' livelihoods and resilience.

Project Justifications:

Since more than 10 years, the Gaza strip has suffered from deteriorating situation in all life aspects especially water resources, meanwhile the Israeli illegal water traps siphoning water supplies from the aquifer before reaching Gaza alternatively, the last Israeli war in Dec. 2008 has come to worsen the situation where destruction hit 40% of the agricultural infrastructure in the Gaza strip which contribute to decrease the available amounts of water; consequently, the project justifications can be listed as mentioned below :

1. Limitation and misuse of water resources and sewage down to the nonstop pumping of underground water which in turn increases the saltiness in land affecting negatively the cultivation on the agricultural crops,
2. Preserve water as much as possible in Gaza Strip, in response to the accelerated population growth against the limited available water resources. This reality is an enormous challenge against food security.
3. The need for apply new technology and develop the current systems to provide the famers with alternative water resources and adopt the ideal agricultural process under the best and possible scientific standards.
4. The lack of awareness and understanding of the significance of water saving within the farmers' community.
5. Lack of water balance due to the increased amount of water that pumped from the aquifer.
6. The Israeli illegal depletion of the Palestinian water by the water traps along the eastern borders of the Gaza strip that is siphoning water supplies from the aquifer before reaching the Gaza Strip.

Project compliance to international standards:

we in PARC as one of the biggest agricultural organization in the Gaza Strip have always sought while putting our strategic plans or implementing our interventions to comply with the international standards as the basics of any action, also to be coincide with the internationally adopted MDGs, our intervention in the field of water falls directly within the framework of MDG7"Ensure environmental sustainability".

In the same context water projects contribute to maintain food security since water is considered the back bone of any productive agricultural sector and this contributes toward the achievement of MDG 1(Eradicate Extreme poverty and hunger).

Recently the international community has considered the environment as pre-requisite to enjoy human rights, it's clear that through these project we also try to integrate our interventions with the international efforts to attain human rights either directly or indirectly (right to clean water, right to food, right to clean environment).

Moreover; we never neglected the issue of climate change in which we aim by implementing these actions to increase the green zones as much as possible to contribute in solve the global warming problem.

Project Goal:

To contribute in achieving environmental sustainability and enhancing the livelihoods of the poor farmers through developing the water conditions in the Gaza Strip.

Specific Objectives:

- To equip the poor farmers with the necessary knowledge and awareness regarding the management of water resources and the use of rain water.
- To achieve better agricultural production and reasonable income rates for poor farmers through rationalizing underground water consumption and reducing water bills.
- To improve the living conditions of farming community through creating new job opportunities for unemployed agricultural workers.

Project Expected Outputs:

- Irrigation networks of 150 open fields and greenhouses (Dunms) will be maintained and equipped.
- 10 concrete water harvest pools will be constructed.
- 1000 working days will be provided for 40 unemployed workers.
- 150 Farmers will benefit directly and other 750 members of their families will benefit indirectly.

Having the abovementioned information and facts , the project acts as a complete cycle linking the technical and awareness raising issues related to the best practices of land use and water resources management.

More specifically, the situation of the target group will be improved through applying the water harvest system and providing the necessary tools and equipment to achieve the best performance in terms of developing and maintaining the irrigation systems, the provision of such tools will increase the efficiency of the irrigation systems which will be reflected positively on the beneficiaries' economic situation, moreover the project will provide training and know how to use these equipment properly, the project will provide six courses (25 farmers each), the training for each group will last four days in the following manner:

- One day of theoretical training on the subject of rationalizing water consumption including (irrigation mechanisms and network irrigation maintenance).
- Two days of training on the issues of protected agriculture including (greenhouses, fertilization, irrigation, examples of protected farms).

- One day of practical training on the issues of installation and maintenance of irrigation networks and field visits.

As foreseen, some measurable results are expected to be attained as follows:

- Quality and quantity of 150 open fields (Dunums) and greenhouses are improved thanks to efficient delivery of water.
- The economic situation of 150 farmers is improved due to less water expenses and high productivity.
- Water consumption for agricultural purposes is rationalized.
- Employment opportunities are created in which 40 of community members are employed.

Project Expected Outcomes:

- Poor marginal farmers' income will be improved.
- Social relations between farmers in the targeted places will be consolidated.
- Community participation and collective work will be enhanced.
- An interconnected network between the farmers benefiting from irrigation networks and wells owners will be installed.
- Awareness among the farmers to the high need to rationalize water consumption and thus reduce the water bill that will be spread.

Targeted Area:

The project will target the poor farmers who have either green houses or open fields in the northern part of the Gaza strip (Beit Lahia area).

Moreover; the project will target Al Nakheel farm which is a long term rent for PARC standing on 40,760 m² in Beit Lahia , the farm contains many trees, green houses, open fields and nurseries (trees,vegetables); basically it is used for the research and experimental purpose and it performs an ideal place to provide training for the newly graduated agronomists, in addition to that Al Nakheel farm is used as an observation field for the farmers who are targeted by other projects implemented by PARC .

Targeted Beneficiaries:

The project is designed to target farmers (150 farmers) living within the targeted area in (Beit Lahya, **were the following criteria are to be taken into consideration:**

- Being a small-scale farmer or rural women heads of households,

- Having big family minimum 5 members,
- Marginalized poor farmers who own individual damaged irrigation greenhouses or open fields.
- Unemployed workers.

Project Activities:

The project will be implemented through carrying out a group of mutually dependent and strongly integrated activities as mentioned below:

- Announcing the project in the targeted areas.
- Forming the project committee in the implementation areas.
- Receiving the application forms from farmers wishing to benefit from the project.
- Screening the farmers' applications and select the candidates farmers to be targeted by the project.
- Conducting a study and assess the farmers needs of irrigation networks and carrier lines.
- Preparing tenders and bids to the irrigation networks and carrier lines requirements.
- Advertising the tenders and the bids in the local newspapers.
- Receiving and opening the tenders.
- Allocating the tenders.
- Forming a committee to receive the materials.
- Taking samples for the specialized laboratory for examination.
- Supplying the materials to the project targeted locations.
- Conducting training courses for farmers on the ways of irrigation systems care.
- Distributing and installing individual irrigation networks.
- Constructing 10 rain water harvest pools with total absorptive capacity of 100 cubic meters each.

Ownership:

In the light of the intervention mechanism, one of the most important dimensions of our project is the ownership, which will be achieved through providing high quality tools and equipment to the poor farmers as a sustainable means of production, once the project is terminated the farmers will continue using this equipment as a private assets.

Moreover the project ownership will be guaranteed by the experience and knowledge gained by the farmers during the training activities since they will be able to run and fix the delivered equipment.

The project also enhances the concept of community ownership and responsibility since one of the main activities is to build a collective water harvest pools serving more than one farmer in the same time, in addition to that the collective ownership will be enhanced through the training and awareness raising activities concerning the concepts of rationalizing and preserving the water consumption and the willingness of the farmers to exchange the accumulated experience among them.

LogFrame:

R=Risk, A=Assumption

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Risks(R) and Assumptions(As)
Overall Goal	To contribute in achieving environmental sustainability and enhancing the livelihoods of the poor farmers through developing the water conditions in the Gaza Strip.	<ul style="list-style-type: none"> An improvement in the environmental conditions in the northern of Gaza strip. Increase in the income of the poor farmers. 	<ul style="list-style-type: none"> Project reports UNDP reports 	
Specific objective	<ul style="list-style-type: none"> To provide the poor farmers with the necessary knowledge and awareness regarding the management of water resources and the use of rain 	<ul style="list-style-type: none"> Awareness of poor farmers rose regarding the issues of water management. 	<ul style="list-style-type: none"> Executing Field observation visits. 	<ul style="list-style-type: none"> R. The bad weather conditions. R. Unavailability of high quality inputs and materials. A. The strong

	<p>water.</p> <ul style="list-style-type: none"> To achieve better agricultural production and reasonable income rates for poor farmers through rationalizing underground water consumption and reducing water bills. To improve the living conditions of farming community through creating new job opportunities for unemployed agricultural workers. 	<ul style="list-style-type: none"> Increase in the quality and quantity of agricultural production for the targeted farmers. Temporary employment opportunities were created for poor farming workers 		<p>experience of the farmers.</p>
Expected Outputs	<ul style="list-style-type: none"> Rain water harvest concrete pools constructed. Individual irrigation networks in greenhouses or open fields are rehabilitated. Job opportunities for unemployed agricultural workers are created. Social relations between farmers in the targeted places will be consolidated. 	<ul style="list-style-type: none"> 10 Concrete pools are constructed. Irrigation networks of 150 Dunums rehabilitated. 1000 working days were created. Reduction in the use of underground water for irrigation. <ul style="list-style-type: none"> Well-functioning of the network irrigations is restored. Good relations between farmers are maintained. 	<ul style="list-style-type: none"> Project reports. Training material. Financial documents. Field visits 	<ul style="list-style-type: none"> R. The bad weather conditions. R. uprooting actions of Israeli Occupation. A. The close relations between farmers
Activities	<p>First:</p> <ul style="list-style-type: none"> Announcing the 	<p>First:</p> <ul style="list-style-type: none"> Project steering 	<ul style="list-style-type: none"> Field verification visits. 	<ul style="list-style-type: none"> R. The bad weather

	<p>project in the targeted areas.</p> <ul style="list-style-type: none"> • Forming the project committee in the implementation areas. • Receiving the application forms from farmers wishing to benefit from the project. • Screening the farmers' applications and select the candidates farmers to benefit from the project <p>Second:</p> <ul style="list-style-type: none"> • Conducting a study and assess the farmers needs of irrigation networks. • Preparing tenders and bids to the irrigation networks. • Advertising the tenders and the bids in the local newspapers. • Receiving and opening the tenders. • Allocating the tenders and analyzing the prices <p>Third:</p> <ul style="list-style-type: none"> • Supplying the materials to the project targeted locations. • Conducting training courses for farmers on the ways of irrigation systems care. • constructing the water harvest pools • Maintaining individual irrigation networks. <p>Fourth:</p> <ul style="list-style-type: none"> • Following -up 	<p>committee was formed.</p> <ul style="list-style-type: none"> • 150 Application received. <p>Second:</p> <ul style="list-style-type: none"> • A list of 150 farmers is prepared. • A local vendor is chosen. <p>Third:</p> <ul style="list-style-type: none"> • Six training courses were implemented. • 10 concrete pools were constructed. • 150 irrigation networks were maintained. <p>Fourth:</p> <ul style="list-style-type: none"> • Regular monitoring visits were implemented. 	<ul style="list-style-type: none"> • Project reports. • Financial documents 	<p>conditions.</p> <ul style="list-style-type: none"> •R. Unavailability of high quality inputs and materials. • A. The strong experience of the farmers. • A. The strong experience of the farmers.
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Budget:

#	Description	Unit	QTY	Unit cost(€)	Total(€)
1	Project staff and employment				
1.1	Project Coordinator	Month	13	900	11700
1.2	Accountant (part time)	Month	13	400	5200
Subtotal(2)					16900
2	Materials				
2.1	Concrete pools	Number	10	5500	55000
2.2	Maintenance of irrigation networks	Dunum	150	100	15000
2.3	Workshops	Number	2	300	600
2.4	Training courses	Number	6	800	4800
2.5	Workers	Day	1000	10	10000
Subtotal(2)					85400
3	Operational cost				
3.2	Transportation	Month	12	200	2400
3.3	Stationary (office support)	Month	12	50	600
3.4	Documentation and Photography	L.S	1	1500	1500
3.5	Auditing	Auditing	1	1500	1500
3.6	Evaluation	Evaluation	1	1500	1500
Subtotal(3)					7500
Subtotal (1,2,3)					109800
4	Overhead (PARC)	Sum Lump	1	5490	5490
Total					115,290