Techno-Agriculture Innovation for Poverty Alleviation

Senegal & West-Africa

What is TIPA?

TIPA is based on the concept of the African Market Garden, part of the Food Security for Africa initiative presented at the World Summit for Sustainable Development (WSSD) in Johannesburg in August 2002 by MASHAV, the Centre for International Co-operation of the Israeli Ministry of Foreign Affairs. Both **TIPA** and the African Market Garden make use of the Family Drip Irrigation System (FDIS) developed by the International Program for Arid Land Crops (IPALAC) at Ben Gurion University of the Negev and world-renowned Israeli irrigation companies who have already introduced FDIS in other regions in Africa, the Far East and Central Asia.

In FDIS, Israeli-developed irrigation technology has been combined with gravity-powered low water pressure, which allows traditional farmers to enjoy all the advantages of drip-irrigation at low costs. Without the need to introduce any further technology, each FDIS project has the capacity to cover an area of up to 500 m^2.

The **TIPA** concept followed the successful African Market Garden project made by Prof Dov Pasternak in Niger and the Sahel since 2000. Prof Pasternak a world leader scientist in agronomy and desertification, head of IPALAC, established together with ICRESAT, the World Bank and Jean Paul II Foundation, a project that includes over 1000 individual farmers that used the FDIS along the Niger Valley and other sub-regions of the Sahel. In deference from the African Market Garden, **TIPA** is set up to be a business-oriented co-operative of farmers who each maintain their independence, while sharing training, the purchase of necessary inputs, security arrangements, post harvest and marketing facilities and other services.

The **TIPA** project was first introduced by the Israeli Embassy and *Ikamba Labantu* (NGO) in the Eastern-Cape in South Africa during 2003. **TIPA** is a cooperative of approximately 100 local farmers, based in an area of approximately 5

hectares, each using their own 500 m^2 plot, installed with the FDIS. **TIPA** is planned as a sustainable concept that allows the local community to reach immediate results, with minimal presence of external experts.

Less than three years after **TIPA** was first presented in three deferent projects and communities in South Africa, it shows beyond any doubt, that it is indeed a sustainable poverty alleviation concept that allows a relatively cheap and accessible solution for rural communities in Africa.

> "Before the implementation of the **TIPA** programme the farmers had a one and a half season per year. This meant that they relied heavily on natural rains and seasonal changes. This now is no longer the situation since the farmers can now plant various crops four times a year. This has improved the crop output by over 400%. The system made it possible for the farmers to properly control water intake and they were able to save more time to tend to the land.
>
> Whereas in the past the farmers could barely produce to sustain themselves they now are the providers of vegetables to the community of Lingelihle, a township outside Cradock with about 65,000 inhabitants."
>
> *(From Ikamba- Labantu's Social Impact Report, Crecdock South Africa, Feb. 2005)*

TIPA in Senegal

The rural Senegalese reality is especially suitable for TIPA. The traditional culture of cooperation and mutual commitment in Senegal facilitate one of the main difficulties of TIPA; adaptation of cooperative culture by the local community. It seems that the main difficulty in Senegal is allocating areas with sufficient and sustainable water supply and the development of sustainable markets that can guaranty sufficient income.

As a major local partner for initiating the first TIPA projects in Senegal the embassy of Israel chose *Green Senegal* together with the international well known NGO - *World Vision*. Both *Green Senegal* and *World Vision* are highly experienced in the field of training rural and urban populations and establishment of rural projects. *World Vision* and *Green Senegal* with the collaboration of the Senegalese Water Services already allocated three deferent communities and locations in the area of Bambay and Thies for establishment of TIPA beginning 2006.

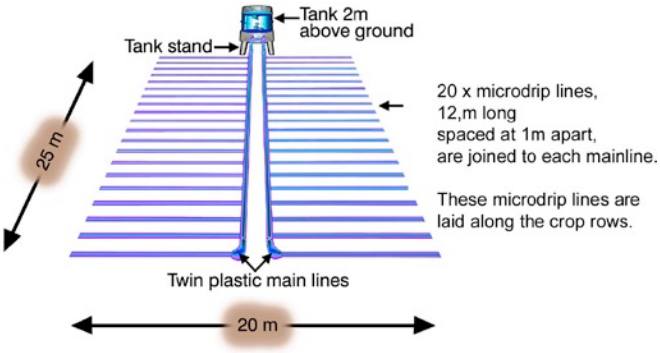
TIPA's Technical Requirements

To establish a project of 100 units (100 farmers) the following technical requirements are needed:

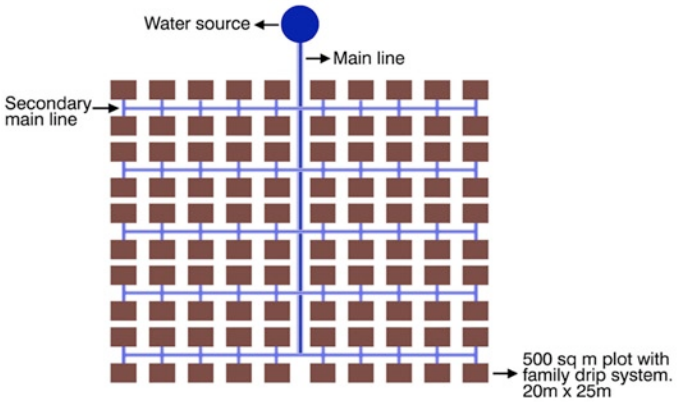
- Area of 5 hectares divided into 100 plots of 500 square meter each (20 x 25 meter), a 500 square meter plot per farmer.
- Sustainable water resource for the daily supply of up to 400 cubic meter of water to the project, with pressure not lower than 3,5 meter (0,35 Atmosphere).
- Basic water infrastructure for distribution of the water to the plots: each plot with access to a water tap.
- Protection / fence of the area allocated for the project.
- A building that will supply the project with a storage space, packing space, sanitation services and other elementary needs of the project.

TIPA'S Community requirements

- An NGO accepted by the community for coordinating and managing the project.
- Establishment of Co-operative by the community members participating in TIPA.
- The cooperative will sign an agreement with the NGO as a pre-condition for a project.
- Selection of 2-3 people accepted by the community to be trained as "seniors". Seniors should be able to communicate in French as well as in the local language.



Layout for a 5 Hectare project of 100 x 500 sq m plots



Typical bean crop grown by the FDIS method

Cradock May 2003

Typical bean crop grown by traditional methods

Cradock March 2003

Costs

The estimated costs for a project of 100 farmers are as follows:

	Price in US$	Total US$	Total CFA	To be paid to:
FDIS *	320 x 100 units	32,000	17,537,697	the irrigation company
Water infrastructure **	6000	6000	3,288,277	local contractor
Seeds, Fertilizers ***	7000	7000	3,836,582	local provider
Agriculture equipment	5000	5000	2,740,230	local provider
Central storage and service Building	6000	6000	3,288,277	local contractor
NGO Training, management & technical support (18 months)		15,000	8,222,367	the NGO
Signs & PR activity		4000	2,192,715	Local provider
Total ****		75,000	41,109,730	

(*) Excluding the cost of the central reservoir and/or water tower. Those should be supply as a pre-condition for the project.

(**) The community will supply a cement stand 1.5 meter tall and a 250 litter metal barrel for each plot according to technical demand supply by the expert. Those modest expenses are the local community financial commitment to the project.

(***) For the first season only

(****) A final proposal will be delivered according to the specific conditions in each community and after a visit by an expert.

An expert allocated by the Israeli Embassy will provide training and constants visits in the project in the first two years. The embassy will also provide special training sessions and visit of Israeli experts on a regular basis.

For further information please contact:

Embassy of Israel
BP 2096
Dakar, Senegal
Tél :(221) 823.35.61/823.79.65
Fax: :(221) 823.64.90
Web: http://dakar.mfa.gov.il
e.mail: culture@dakar.mfa.gov.il / cao-sec@dakar.mfa.gov.il

GREEN SENEGAL
Groupe de Recherche et d'Etudes Environnementales
19, HLM route de Dakar
BP 219
Thiès, Senegal
Tél./Fax: (221) 951.68.30
Web: http://www.green-senegal.org
e.mail: greensenegal@sentoo.sn