

# **Agricultural development for peri-urban and urban communities' livelihood enhancement: A case study on the introduction of the microgardening technology in The Gambia (West Africa)**

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# 1. Background

## ● **Baseline situation in 2004**

- **In 2004: Local production very limited**
- **Main constraints of production systems :**
  - **Production planning and planting material**
  - **Crop consistency**
  - **Cultural techniques**
  - **Production inputs,**
  - **Pest control**
  - **Water management**
  - **Marketing issues**

**Poverty reduction needed to focus on both urban and rural areas**

# 1. Background

## ● Baseline situation in 2004



←  
Nursery

**Traditional growing  
Methods and  
equipment**

↙  
Water source



↓  
Irrigation





## 2. GAMHORT 1 & 2



- **Period: 2007 and 2008 (Convent. Horticulture)**
- **Donors: FRB ← UMCOR, 2 phases of 1 year each)**
- **Partners : SJFF and NATC**
- **Overall objective**  
To build the capacities of **600 Gambian farmers**, mainly women, in horticultural production, enabling **year-round food security and income generation.**





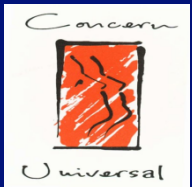
## 2. GAMHORT projects 1 & 2 (Contd)

### Achievements in RL enhancement

Step down training with 3 steps:

Trainers (1) → Farmer leaders (2) → com. Level (3)

**Farmer and trainer raining topics covered the whole value chain (sowing to post harvest)**



# 2. GAMHORT projects 1 & 2 (Contd)

## Step down training with 3 steps:



← **Trainer training**  
(Step 1)



← **Farmer leader training**  
(Step 2)



← **Community level**  
(Step 3)

## 2. GAMHORT 1 & 2 (Contd)

- **Achievements in figures (2008):**
  - **29 trainers, 690 farmers directly trained → >3000 beneficiaries**
  - **Impact on production and incomes vs. imports:**
    - **Local production boosted from 55 % in 2005 to about 70% in 2008.**
    - **Farmers' incomes increased to over 70 % vs. 50:50 in 2005.**



# 2. GAMHORT 1 & 2 (Contd)

## Achievements in figures (2008):





# 3. GAMHORT Microgardening



- **An overview on the technology:**

- **Introduced from Latin America in 1999.**

- **Principle:**

It's a **soilless** technology consisting of **intensively growing vegetables** on wood tables to be installed anywhere (**yards, terraces, balconies**).

**Enables to also rich poor urban communities**

# GAMHORT Microgardening

● An overview on the techniques

2 types of substrates :

■ Solid substrates

■ Liquid substrate  
(hydroponic)



Rice hulls



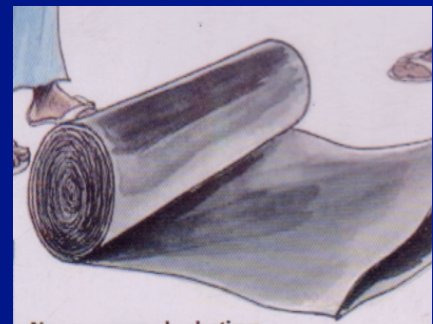
Wood pallets



Groundnut shells



Gravels





# GAMHORT Microgardening



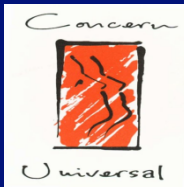
- **An overview on the technology:**
  - **Seasons: Dry and rainy seasons**
  - **Plant species: al vegetables items**
  - **Plant nutrition: Complete fert. Solutions**
  - **Plant protection: organic pesticides**
  - **Plant lifecycles: rather shorter (e.g.: lettuce)**
  - **Yields: high → 1.5-5 folds (semi-organic)**





# . GAMHORT Microgardening

- **An overview on the technology:**
  - **Potential production: 4.5 to 15 kg/table (1 m<sup>2</sup>) ← mint and Hot pepper**
  - **Production costs vary from D70 to 121**
  - **Turnovers : Gambian Dalasi 158 – 600 (Exh. Rate \$1= 26-30).**



# GAMHORT Microgardening

## ● **GAMHORT MG, phases 1 & 2:**

- **Period: 2009-2010 (Microgardening)**
- **Donors: FRB ← UMCOR (US \$50,000, 2 phases)**
- **Partners : SJFF, Mutapola, MMAP, NATC**

## ● **Overall objective (Summarised : phases 1 &2):**

**To introduce, promote and popularise the technology in peri-urban, urban and rural areas of The Gambia and building the capacities of 150-300 youths and women to ensure food availability and income generation.**



# 3. GAMHORT Microgardening



- **GAMHORT MG (phases 1 & 2 summarised):**
  - **Specific objectives:**
    - To train 50-100 youths in urban and peri-urban areas for income-generation purposes to fight idleness and urban drift
    - To train 50-100 household women in urban and peri-urban areas to promote healthy vegetable consumption and income generation
    - To pilot and further develop the technology among vulnerable groups (specifically **PLHIVs**) and people living with disability
    - To pilot the technology in rural areas to encourage diversification .
    - To carry out participatory action research to sustain the development of the technology

# 3. GAMHORT Microgardening

## ● Main achievements

### ■ Phase 1 (2008)

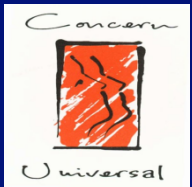
- Staff training: (GAMHORT and partners)
- 4 dem. Points (CU, GiG Farm, WR and NBR)



↑  
Training (GiG Farm + NATC)

↑  
Pilot sites (GiG Farm + CU)





# 3. GAMHORT Microgardening



## ■ Phase 1 (contd)

### Main achievements in figures:

#### ■ Area coverage (117 %):

Area	Youths	Women	Totals
Banjul (1)	0	11	11
Kombo urban (7)	55	44	99
Kombo periurban (5)	0	30	30
Kombo Rural (2)	0	10	10
NBR (5)	0	25	25
<b>Totals (20 sites)</b>	<b>55/50</b>	<b>120/100</b>	<b>175/150</b>

# GAMHORT Microgardening

## ● Phase 1 (contd):

### ■ Beneficiary training :



**Latrikunda youths**



**Lamen women**



**Fajikunda women**



**Kanifing women**



# 3. GAMHORT Microgardening

## ● Phase 1 (contd)

### ■ Beneficiary training (PLHIVs):



**Mutapola**



**Alatentu**



**Nganyakilling**

# 3. GAMHORT Microgardening

- **Phase 1 : Beneficiary training (FAO rep visit to the Kanifing women group**





# 3. GAMHORT Microgardening



- **Phase 2 (ongoing): achievements:**
  - **Main areas:**
    - **Assistance to former/new beneficiaries (Production & marketing)**
    - **Maintenance of demonstration points**
    - **Action research**
      - **Crop intensification → Increased production**
      - **Research on local solutions ← Availability and affordability**
      - **Sustainability ← local solutions and from assistance to UTG (lectures, student supervision)**

# 3. GAMHORT Microgardening

- **Crop intensification: Example on tomato: 9 plants/m<sup>2</sup> (3 times) :**
  - **> 40 fruits/plant**
  - **5-10 kg /table (at least times)**
  - **Low production costs → higher income**



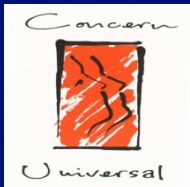
**Aspect of a table**



**Aspect of a plant**



**Aspect of a cluster**



# 3. GAMHORT Microgardening

## ● Sustainability:

- **6 BSc students supervised** (crop staggering, organic and rainy season production, drip irrigation, etc.), including:
  - **2 students on Microgardening :**
    - **S. Fatty:** "Evaluation of different solid substrates from local resources for sustainable microgardening technology development in urban and peri-urban areas of the Gambia"
    - **O. Sanyang:** "Investigating the effect of manure on the quality and yield of vegetables from microgardening for substitution purposes to imported fertilisers"
    - "

# 3. GAMHORT Microgardening

## Sustainability: A few research results :

### Trial 1: Adapting dug beds to tables to costs



Covered bed



fruit cluster



1 harvest

13 pickings  
55 g/fr  
(38-127g)  
42 t/ha



Uncovered bed



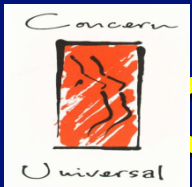
fruit cluster



1 harvest

pickings, 64  
g/fr (40-89  
g)  
58 t/ha15



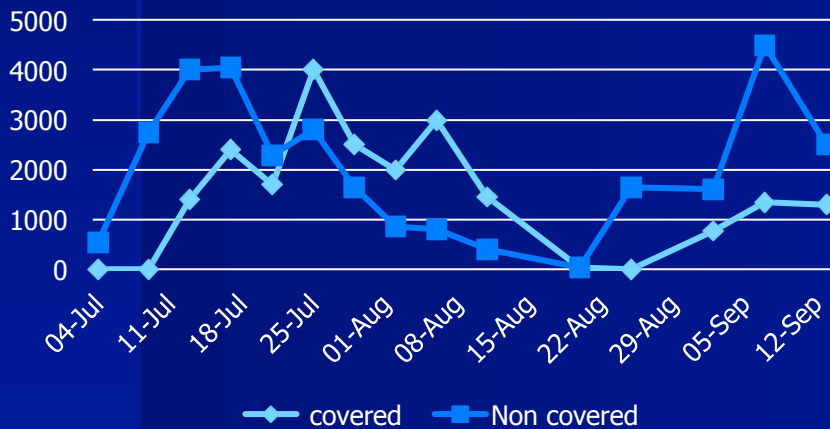


# 3. GAMHORT Microgardening

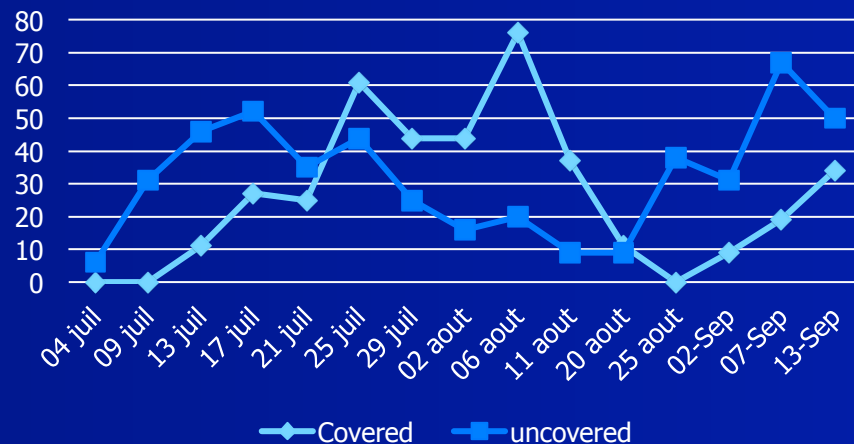
## Sustainability: A few research results :

### Trial 2: Adapting other types of substrates

Fruit weight per harvest (g)



Fruit number per harvest



- No need to covered beds
- Same performances as on tables (yield components, yield)
- Low costs)

# 3. GAMHORT Microgardening

## Sustainability: A few research results

### Trial 2: Adapting other types of substrates



Control treatment



Groundnut shells



Rice husks (100 %)



Saw dust (100 %)



Mixed substrate (T2,3,4)



Exp. design



# GAMHORT Microgardening



## ● Expectations and prospects

- Local partners staffs effectively trained and ready to take responsibility in diffusing the technology;
- Expansion of reached areas in The Gambia;
- Availability and self consumption of organic produce being a reality;
- PLHIVs mainly women's networks actively involved in the technology and profiting from it;
- The technology gradually included in poverty reduction strategies in The Gambia;
- Technology packages available (**action research**) and used by operative networks .

**THANKS**



**FOR YOUR**



**ATTENTION**

