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# Agroecology in the Egyptian Context:

## Policies, Initiatives, and Bottlenecks

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# Main Points

01 Population and Agricultural Resources

02 Major Problems and Challenges in the Agricultural Sector

03 Agricultural Policies: Objectives and Instruments

04 Agroecological Practices in Egyptian Agriculture

05 Bottlenecks of Agroecology in the Egyptian Context

# Population and Agricultural Resources

| ITEMS | | 2022 | 2050 |
|---|---|---|---|
| **Total Population** | (m capita) | 104 | 162.2 |
| **Agricultural Population** | (m capita) | 40 | 60.7 |
| **Agricultural Land** | (m feddan) | 9.8 | 12.8 |
| ▪ Old Land | (m feddan) | 6.1 | 6.1 |
| ▪ New Land | (m feddan) | 3.7 | 6.7 |
| **Water Supply,** Fresh | (b m3) | 60 | 60 |
| Reuse | (b m3) | 21 | 21 |
| **Per Capita :** Agric. Land | (feddan) | 0.09 | 0.08 |
| Water, Fresh | (m3) | 577 | 361 |

# Major Problems and Challenges in the Agricultural Sector

## ▪ Main Problems

1. **Increasing population with limited agricultural resources particularly W.R.T water resources**
   (Decreasing Quantity and Deteriorating Quality)

2. **Land fragmentation and dominance of tinny and small farms :**

   **85%** of landholders are less than 1 feddan.

   **1.6%** feddan is the average size of farmers.

3. **The necessity to increase food production to match the increase in food consumption, to control the food consumption, to control the food gap (decrease food imports).**

# Major Problems and Challenges in the Agricultural Sector

## ▪ Main Challenges

1. Narrow base of land and water resources.
2. Climate changes and their Inverse effects on agricultural productivity and water resources.
3. Environment and food quality preservation to protect public health.

# Agricultural Policies : Objectives

Increasing agricultural production and accelerating the growth of Agricultural Gross Domestic Product (Agricultural GDP)

Accelerating the growth of agricultural exports focusing on exports from horticultural crops

Achieving national food security, focusing on raising self-sufficiency levels (ratios) regarding basic commodities (cereal crops, vegetable oil crops, sugar crops) as well as meat and milk.

Improving farmers' livelihoods, focusing on small farmers

# Agricultural Policies : Instruments

## Two main instruments:

First: Agricultural intensification techniques and increasing productivity, including the following:

1. Use of chemical fertilizers with price-subsidized nitrogenous types.
2. Use of pesticides.
3. Adoption of High Yield Varieties (HYVs) particularly for cereal crops.
4. Intensification of mechanical power.
5. Focus on water irrigation projects.

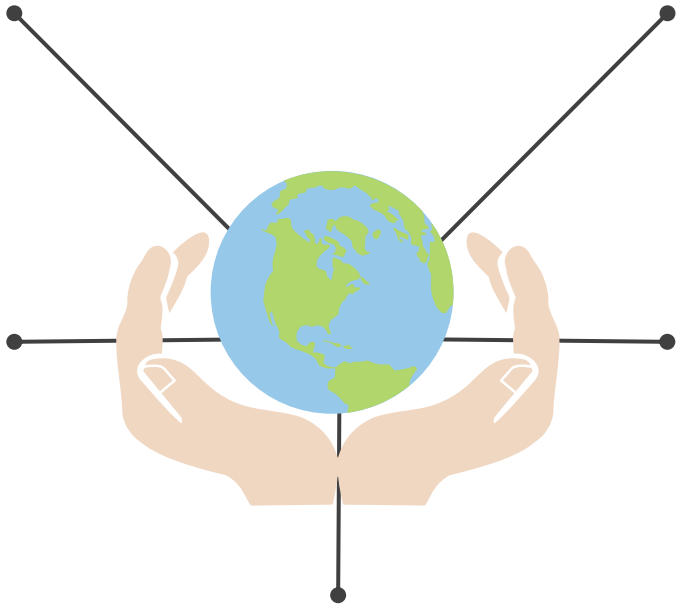
Second: Increase the area cultivated in the new land, particularly through the state-owned mega projects:

1. New Delta Project (2.2 m feddan).
2. Toshki Project (1.0 m feddan).
3. Sinai Project (0.5 m feddan).

# Agroecological practices in Egyptian Agriculture

Crop-livestock integration in small and medium farms

Production-consumption integration in farm households



Among the different farm-size categories, family farms are the most related to agroecology principles

Organic agriculture occupies about 3 percent of the total agricultural area

In comparison between the old land and the new land in terms of agroecology, the old land is more qualified to apply principles of agroecology .

(Crop diversification, Crop-livestock integration, Recycling, Organic fertilizer, Crop rotation, etc)

# Elements and initiatives of agroecology in the agricultural policies

Because water is the most limiting factor of agricultural production in Egypt, water-related projects occupy a high priority in the agricultural policy aiming at resolving water irrigation problem. These projects as well as other policies could be seen as elements and initiatives of agroecology such as:

1. The National Project for the development of on-farm irrigation and rationalization of irrigation water use in agriculture.
2. The National Project for the development of drought-tolerant fruit crops.
3. The National Project for the integral development of rained areas.
4. The National Project of Lining of the Main Canals.

# Elements and initiatives of agroecology in the agricultural policies (cont'd)

In addition to the previously mentioned projects on water, some other projects and activities, in the area of research, could also be seen as elements and initiatives of agroecology such as:

1. Develop drought-stress crop varieties.
2. Develop heat-stress crop varieties.
3. Develop irrigation water-saving practices to increase water use efficiency. For example; raised-bed cultivation, laser leveling, deficit irrigation, etc.

# Bottlenecks of Agroecology in the Egyptian Context

- Transformation of Egyptian agriculture from a traditional to an agroecology-based system is faced with major bottlenecks, including institutional, economic the following:
- **Institutional bottlenecks:**

1. Collapsed agricultural cooperatives which reflects negatively on the collective work in agricultural production and marketing activities,
2. Weak performance of Water Users Associations (WUAs) which reflect negatively on irrigation water efficiency,
3. Weak Linkages between farmers or their organizations and processors and traders through efficient integrated agricultural value chains
4. Expenditure on R&D in agriculture is generally weak which reflects negatively on agroecology scientific innovations
5. Lack of advisory and extension services
6. Limited enforcement of policies

# Bottlenecks of Agroecology in Egypt (Cont'd)

## Economic bottlenecks

1. Land fragmentation and dominance of small-size farms have adverse consequences on agricultural production in general and on agroecological production systems in particular
2. Food security concerns at the macro level
3. Lack of soil site information which impedes determining the right chemical fertilizer and pesticide doses

## Technical bottlenecks

1. Lack of recycling of farm residues (40 million tons annually) to organic fertilizers (needed to substitute chemical fertilizers) and animal feed
2. Weak infrastructure for the use of solar and other clean energy for farm operations instead of diesel

## Social bottlenecks

1. Small farmers are reluctant to transform to agroecology due to potential risk and vulnerable incomes with no prior support from the government
2. Perception of farmers is weak in terms of agroecology, particularly under the absence of agricultural extension services
3. Dominant perception by policymakers that the agroecology approach can not effectively respond to national food security interests

# THANK YOU