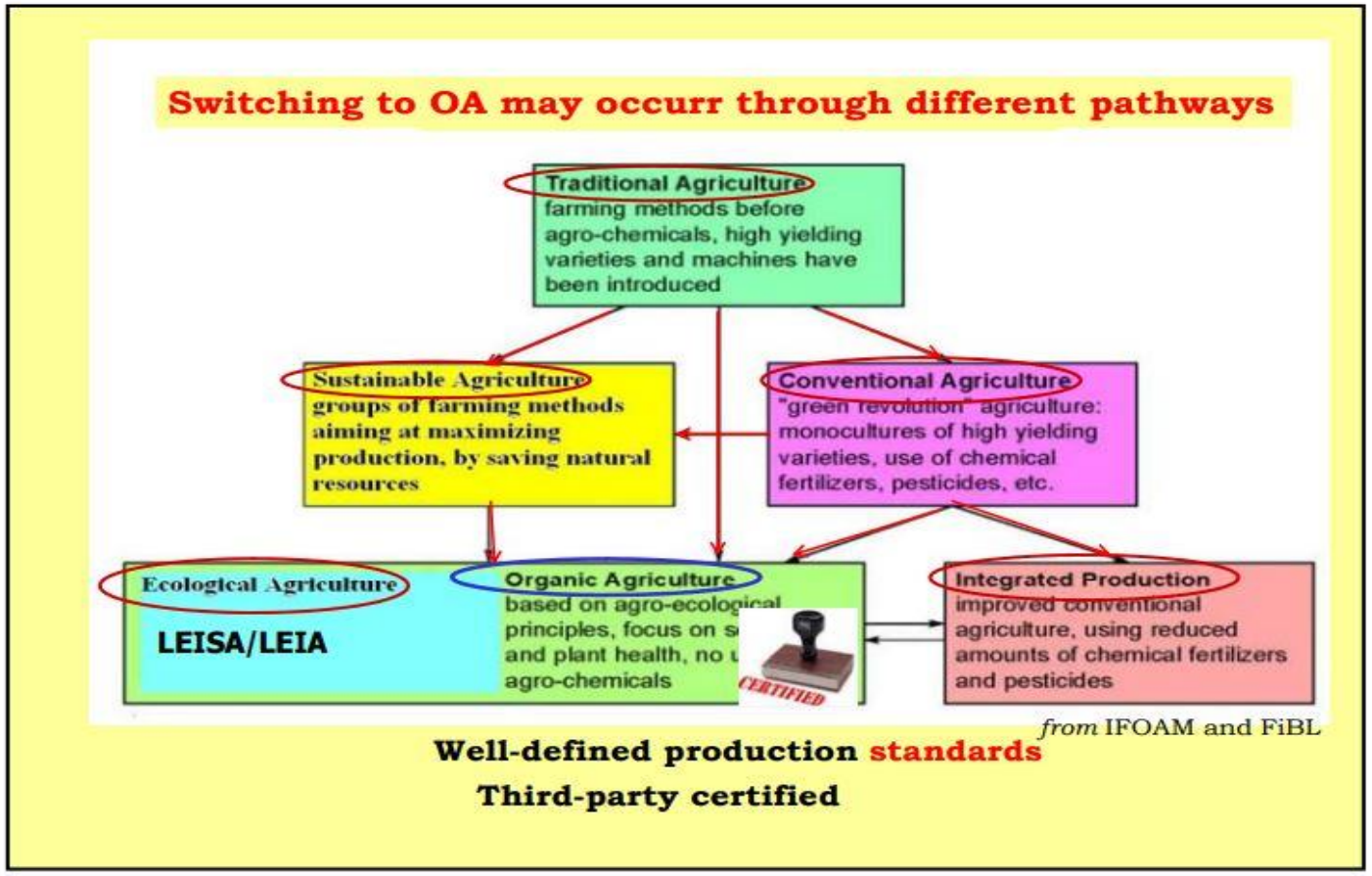
Converting from conventional to organic farming

by:

Dr. Arshad Abdulkhalq Yaseen

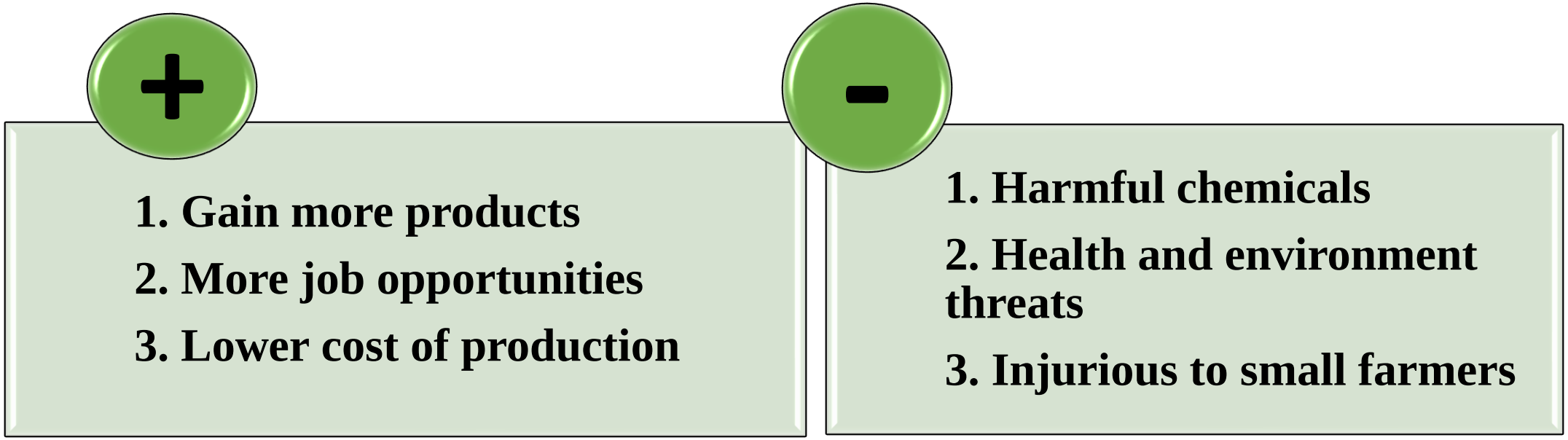
Organic farming and conventional farming are two different methods of producing food and other agricultural products. Organic farming involves growing crops and raising animals without the use of synthetic pesticides, fertilizers, genetically modified organisms (GMOs). In contrast, conventional farming relies heavily on these inputs to increase yields and manage pests and diseases.



organic agriculture practices are based on the following principles:

Source of Organic farming

Advantage and dis Advantages of Conventional Farming



Pros and Cons of Organic Farming

Why organic farming is necessary?

1. Sustainable and eco-friendly technology.
2. It improves the quality and shelf of the farm produce.
3. It encourages the sustainable livelihood of the producers.
4. It improves the physical, chemical and biological health of the soil.
5. Promotes healthy use of natural resources and minimizes all forms of pollution.
6. It enhances and sustains biological diversity within the system.

Step by step conversion to organic agriculture

The procedure of conversion of a farm commonly consists of three steps.

- **In a first step:** it is recommended to collect information on appropriate organic farming practices by visiting organic farms and see how others are doing it.
- **In a second step:** the most promising organic practices should be tried out on selected plots or fields to get familiar with.
- **In a third step:** make contact with organic certification bodies and find out what conversion grants are available.

Support from an experienced extension officer or a farmer is usually very helpful to give guidance in the process.

A time of change

Converting from conventional to organic farming is a time of change for both the land and the farmer. The conversion period may require specific management actions which will not be needed once the organic system is established. The most important thing is to establish a farming system that will work in the long term; this might need changes in soil management, crop rotation, livestock and infrastructure.

Farmers who are interested in converting their farm to organic agriculture need to know:

- Must have a conversion planning and aims
- How to improve soil fertility.
- How to keep crops healthy.
- How to best increase diversity in the farm.
- How to keep livestock healthy.
- How to give value to organic products and how to successfully sell them.

There are the examples of recommended techniques that could be used for the transfer from conventional to organic agriculture

1- Mulching

This technique is simple and involves covering the soil with a protective layer to increase moisture and fertility, thus contributing to soil health. Mulching can be done with an organic layer of compost, manure, grass clippings, bark chips.

2- Intercropping

It usually involves growing of two leguminous plants and alternating them usually with cereal crops. The main aim is to maximize the benefits of soil diversification by diversifying production.

3- Compositing

In order to enrich soil fertility with nutrients farmers are applying considerable layer of compost. It represents a mixture of biomass, plant residues and manure. The most suitable plant residues for compost are legumes as contain almost all essential macronutrients.

4- Green manuring

Like composting, this technique is designed to enrich the soil with nutrients and increase its fertility.

5- Organic pest management

Bio-control is very important to protect plant crops and animals from diseases and pests.

6- Appropriate seeds materials

While the quality of plant crops depends of used seeds. Their origin must be known, while they must be genetically, chemically and bacteriologically clean.

7- Growing farm-own animal feed

Analysis of the food traceability from farm to fork shows that each stage of the agri-food chain is of major importance in generating the chemical, physical and biological risks. Feeding animals with contaminated feed is real problem that unfortunately has serious repercussions on the whole food chain. So, considering this organic farming recommends growing farms' own animal feed.

Organic standards

There are various organic standards on the private, national, regional and international level. The IFOAM Basic Standards and Codex standards provide a frame work for certification bodies and standard setting organizations worldwide to develop their own certification standards and cannot be used for certification on their own.

Organic standards

Organic standards address various aspects of organic production, namely:

- General farm production requirements and conversion periods
- crop production requirements processing
- Processing and handling requirement
- Record keeping of production and sales records
- labeling requirements
- Undergoing periodic on-site inspections

Organic certification

Definitions:

Organic certification is a system by which agricultural and natural products and the systems in which they were produced, processed, handled and retailed are assessed for conformity to set organic standards.

- Organic certification confirms that a product is produced and processed according to specific organic standards.
- Labels and certification marks help the consumer to recognize trustworthy organic products easily.

Certification systems referring to a binding regulation

IFOAM ACCREDITED	**International Federation of Organic Agriculture Movements** IFOAM Basic Standards **http://www.ifoam.org** VOLOUNTARY
AGRICOLTURA BIOLOGICA	**European Community** EC Reg. 2092/91 and following amendments (already more than 50) COMPULSORY
USDA ORGANIC	**USA** NOP (National Organic Program) **7 CFR Part 205** **http://www.ams.usda.gov/nop/** In force since 21st October 2002 COMPULSORY
JAS	**Japan** JAS (Japanese Agricultural Standards) Organic Rules **http://www.maff.go.jp/eindex.html** COMPULSORY

Inspection

Inspection shall be carried out with a reasonable time interval before the first harvest.
Inspectors visit the (farmers) annually to collect information about their methods.

- inspections are required, with a
• physical tour
• examination of records
• an oral interview.

There are four different categories of organic products that can be ma consumers:

1. “100% Organic” means that the product was produced and processed using only organic methods and organic ingredients.

2. “Organic” means that the product was produced using only organic methods and contains a minimum of 95% organic ingredients. The other 5% of ingredients must be non-GMO. The majority of organic items found in stores today fall within this category.

3. “Made with organic ingredients” products contain between 70% and 95% organic ingredients. The non-organic ingredients in these products must be non-GMO and produced without irradiation

4. Ingredient panel Products with less than 70% organic ingredients can only list the organic items on the ingredient panel. The USDA Organic Seal must not be used. No organic claim is allowed on the front panel of the product

Biostimulants and plant extracts

Plants due to the high content of various **bioactive compounds** are the main raw material for production of valuable, and useful bio-products (*e.g.*, food, cosmetics, medicines, biostimulants, biopesticides, and feed). Different plant parts, for instance: seeds, fruits, flowers, stems, leaves, and roots can be used for their manufacture.
Nowadays, there is a clear need to develop new, efficient, and environmentally safe methods of stimulation of plant, growth and crop protection.

A **biostimulant** is a substance or microorganism applied to plants or soil to enhance plant growth and development.

The key functions of biostimulants include:

1. Improving nutrient efficiency.
2. Enhancing root development.
3. Increasing resistance to environmental stresses.
4. And more productive plants.

A **plant extract** is a substance derived from a plant, usually through a process of extraction, where the plant's bioactive compounds are isolated from its tissues.

Type of plant extract

1. Leaf extract
2. Root extract
3. Bark extract
4. Seed extract
5. Fruit extract
6. Flower extract

Function of plant extract

1. Nutrient uptake
2. Disease resistance
3. Increase soil microbial activity
4. Resistance to abiotic stress
5. Increase soil fertility
6. Overall plant health promotion