Organic farming: Producing safe and healthy food and environment

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DEFINITION OF **ORGANIC FARMING**

- The production of crops and livestock without using any chemical pesticide, synthetic fertilizers, antibiotics, genetically modified organisms (GMO) and growth hormones.
- Organic agriculture aims the human health without any harm to the enviroment
- Production system that sustain the health of soil and ecosystem

Principles of Organic Agriculture

[IFOAM – International Federation Organic Agricultural Movement)]

The Principle of Health.

enhance the health of soil, plant, animal, human and planet as one and indivisible

The Principle of Ecology.

living ecological systems and cycles, work with them, emulate them and help sustain them

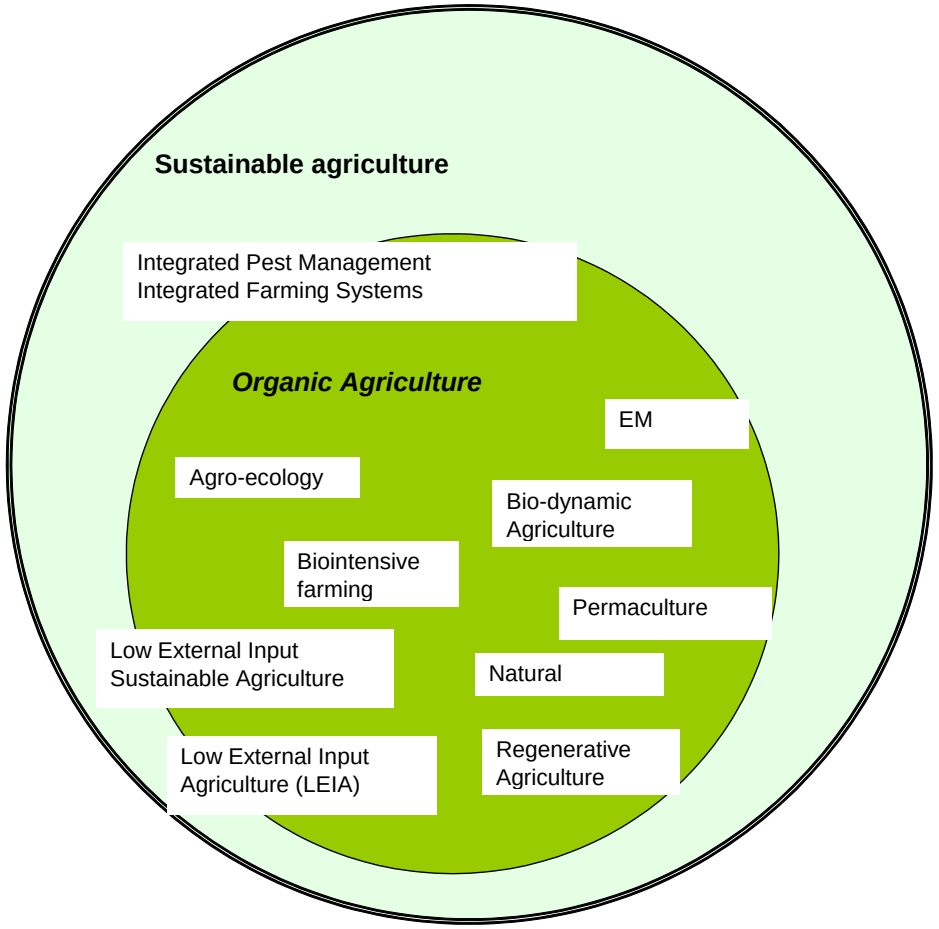
The Principle of Fairness.

ensure fairness with regard to the common environment and life opportunities

The Principle of Care.

managed in a precautionary and responsible be manner to protect the health and well-being of current and future generations and the environment

Organic by any other name

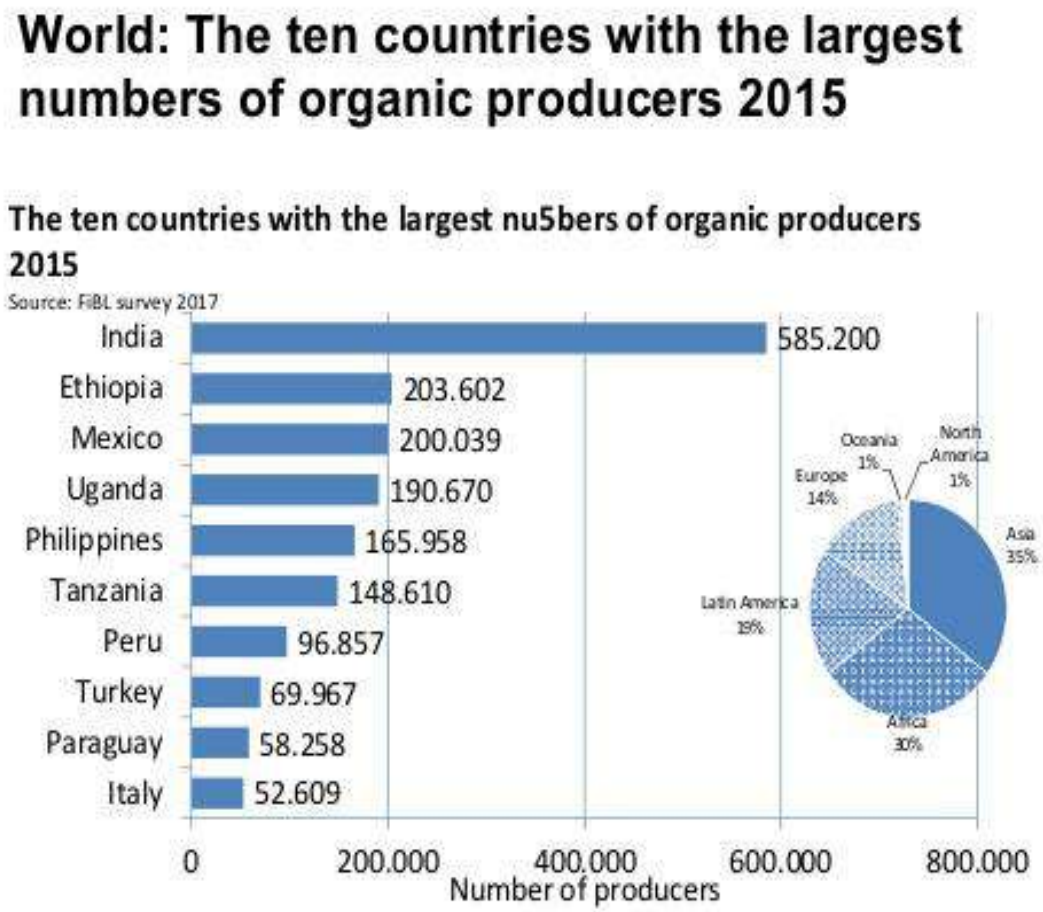


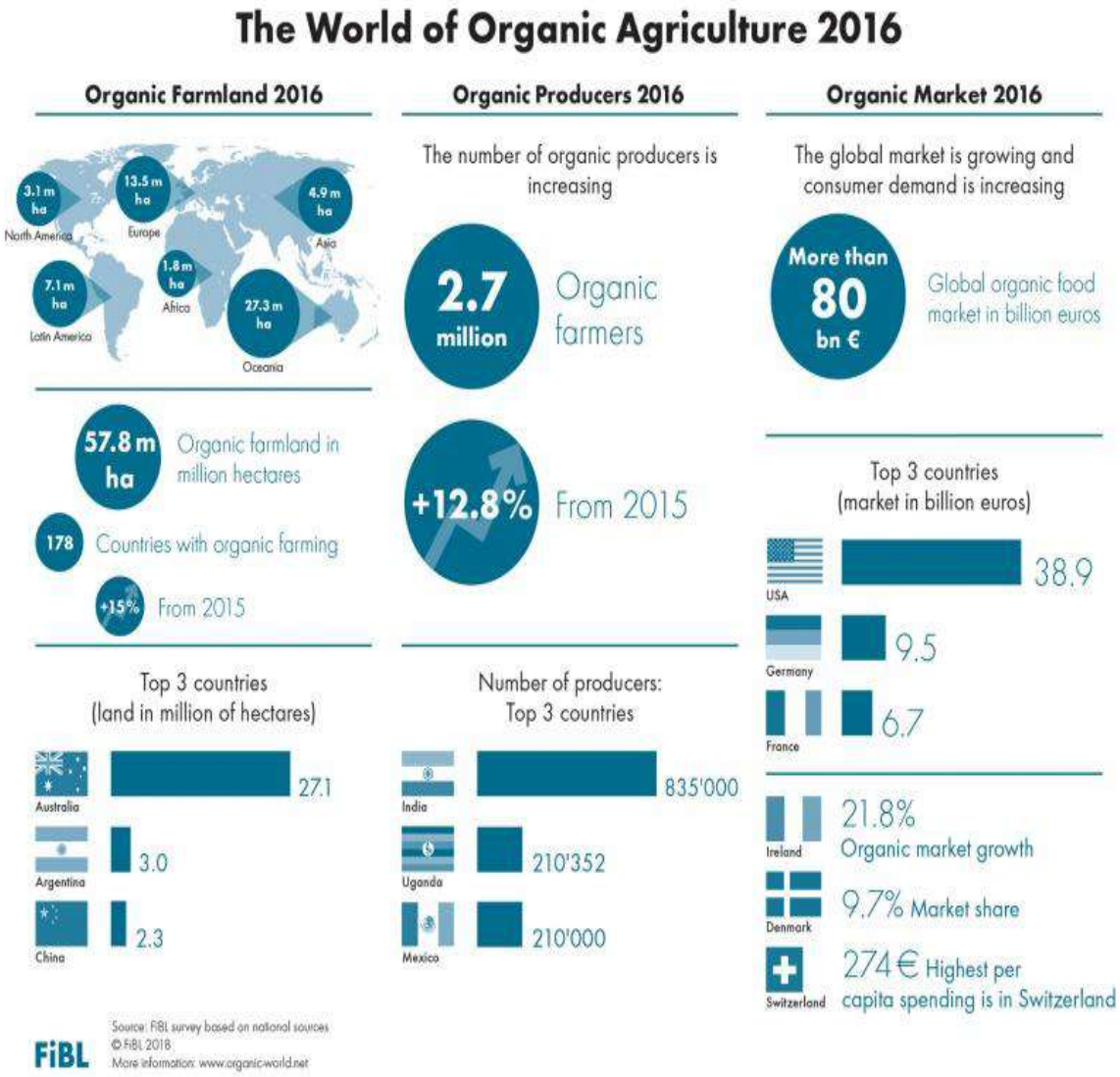
- Biodynamic Farming (Steiner)
- Natural Farming (Fukuoka)
- Organic-biological farming (Müller)
- Permaculture (Mollison)
- EM farming (Higa)
- Ecological farming (80-ies)
- Agro-ecology (Altieri)

Why organic food

- Healthy foods: contains no toxic subtances
- Higher nutritional value
- Tastier and fresher
- Environmental safe

World's organic farming scenario





Organic Farming in Malaysia

- **MALAYSIAN ORGANIC CERTIFICATION SCHEME (myORGANIC) from Department of Agriculture (DOA)**

Malaysian Organic Scheme (SOM)

- A certification scheme drawn up by Malaysian Department of Agriculture to recognize farms that practice organic farming based on Malaysian Standard MS 1529:2001 The Production, Processing, Labelling & Marketing of Plant Based Organically Produced Food.

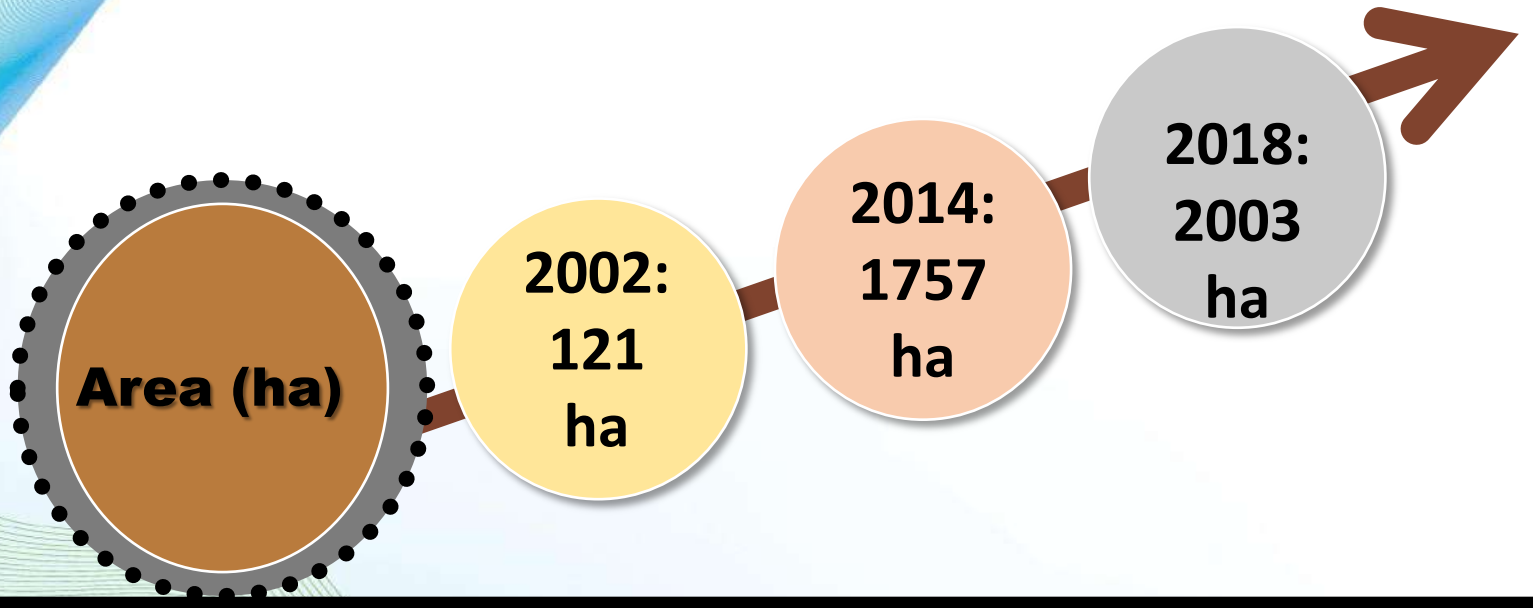
Malaysian Organic (myOrganic)

- Rebranding from SOM to recognize farms that practice organic farming based on Malaysian Standard MS 1529:2015 Plant-based organically produced foods-requirements for production, processing, handling, labelling and marketing (First Revision).

MS1529:2001

MS1529: 2015

Organic farming scenario in Malaysia



Comodity	myOrganic certificationaq (until April 2018) (DOA, 2018)	
	No of farm	Area (ha)
Fruit	40	335.21
Vegetable	54	144.81
Paddy	3	118.46
Others	114	1404.54
JUMLAH	211	2003.02

Farms in Malaysia with myOrganic certification until April 2018 (DOA, 2018)

State	No of farm
Perlis	0
Kedah	16
P.Pinang	14
Perak	12
Selangor	30
N. Sembilan	13
Melaka	2
Johor	37
Pahang	46
Terengganu	6
Kelantan	8
Sabah	20
Sarawak	6
Labuan	1
Total	211

LADANG ORGANIK DI MALAYSIA

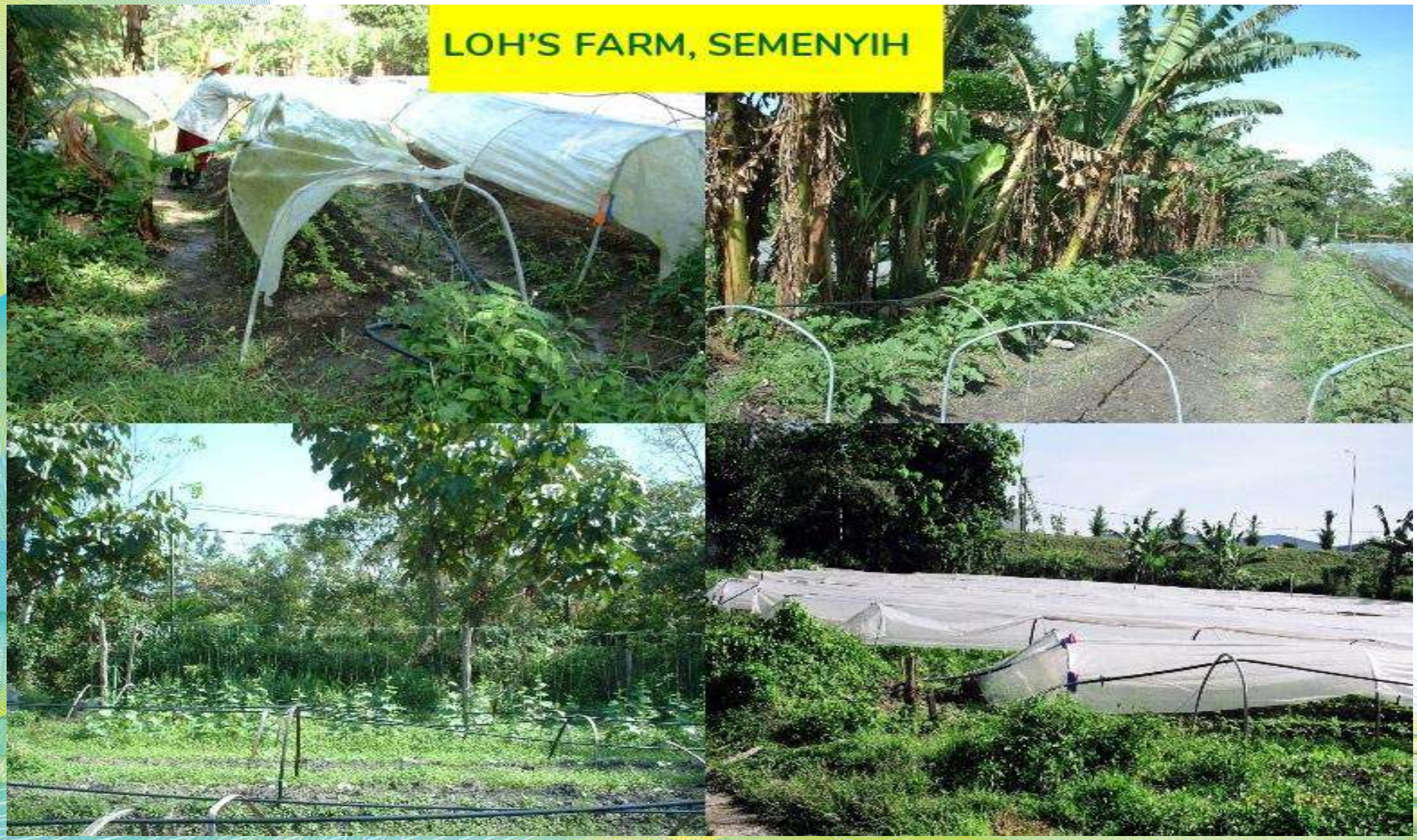
KAHANG, JOHOR

KG.EWA, LANGKAWI

ZENZIN FARM, JOHORE

GOLDEN MERIDIAN, SELANGOR

LOH'S FARM, SEMENYIH



How to start an organic farming

1)Find the right location for your organic farm

- land with fertile soil, good drainage and access to sufficient good-quality water for irrigation
- land that has been free from synthetic fertilizers and pesticides for at least 2 years
- can be an isolated area

2) Buffer zone

- Growers must have distance between neighboring areas (or roadways) where prohibited materials are applied
- The boundaries shall include physical buffer (2 meter height) and located 10 meter from any conventional farm (Malaysia standard MS1529:2001)
- Non living buffer such bricks and zink fences also can be used
- provide a dedicated area to prevent any contamination (drift, runoff, pesticide spray and roadway drainage)

- Buffer zone can be planted with grass, permanent trees or shrubs which can create habitat for birds, wildlife and beneficial insects
- Green manure plant such *Sesbania*, *Gliricidia* etc
- Neem
- Lemongrass, dill, banana, cassava can be planted in a row

Crop or plants in buffer zone cannot be sold as organic product

Organic production package

Soil nutrient management

- Organic fertlizer
- Bio fertilizer
- Compost
- Healthy soil

Vegetables
Fruits
Paddy
Livestock

Ecosystem management

- Planting system/crop rotation/mixed crop/intercrop
- Pest and disease management
- Ecological engineering

Recycle crop and livestock waste as compost

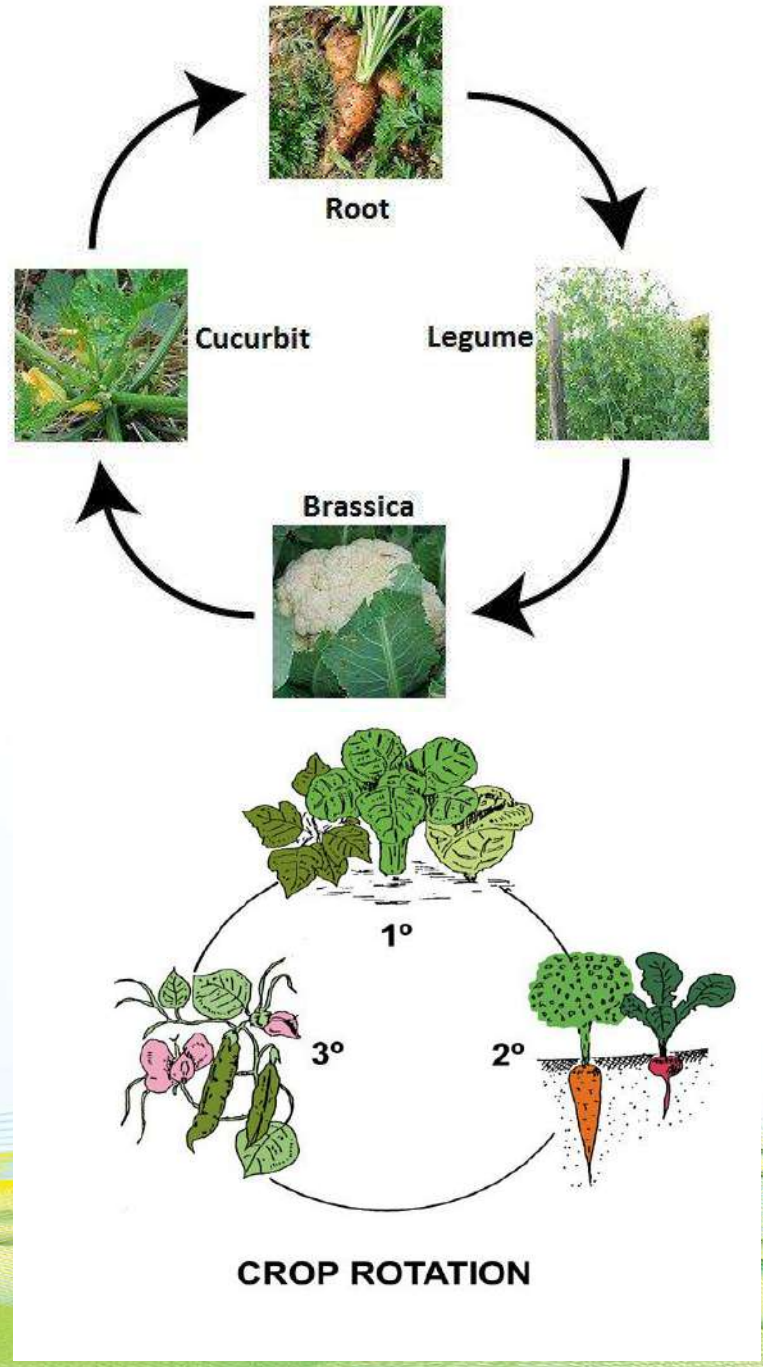
Agriculture waste management

Crop rotation

Crop rotation is the practice of growing a series of different types of crops in the same area in sequenced seasons

Advantages of crop rotation:

- it helps in reducing soil erosion
- increases soil fertility and crop yield.
- break the buildup of pathogens and pests that often occurs when one species is continuously cropped
- improve soil structure and fertility by increasing biomass from varied root structures



Compost

- organic matter that has been decomposed in a process called composting. This process recycles various organic materials into a humus-like material (the compost)

Pest and disease management

- Cultural practices – mixed cropping, inter cropping and crop rotation
- Mechanical and physical control - include tillage, mowing, cutting, mulching
- Biological control – Natural enemies of insect pests, known as biological control agents that can be predators, parasitoids and pathogens.
- Biopesticides - Neem (azadiractine extract), garlic oil, Bacillus thuriengesis , soap dan vineger

Biopesticide available in the market

- Neem oil
- Garlic oil
- Bio guard
- Green patrol
- *Bacillus thuriengesis*

Animal husbandary/livestock

Advantages:

- Nutrient cycling - a process in which nutrients are returned to the soil through manure and compost
- Weed control -animals can be used to graze out weeds on crops or pastures

MARDI'S ACHIEVEMENTS IN ORGANIC FARMING

MARDI Integrated Organic Farm

- Establised in 2003
- Certified organic from DOA in 2015
- 4 hectar of cropping area
- Production and research/experiment plot
- leafy and fruity vegetables, fruits and livestock (chicken and goat)
- Facility: Compost house, netted structure plot, open plot

myOrganic MALAYSIA
Kualiti Kehidupan


KEMENTERIAN PERTANIAN DAN INDUSTRI ASAS TANI MALAYSIA
Ministry Of Agriculture and Agro-Based Industry Malaysia

SIJIL Certificate

TIMBALAN PENGARAH PROGRAM SAINS TANAMAN & PENGURUSAN TANAH

Ladang Organik Bersepadu MARDI,
Pusat Penyelidikan Tanaman & Sains Tanah, Serdang Selangor

4.0 Ha

Mangga, Nangka, Durian, Betik, Melon, Durian Belanda, Sawi, Salad, Cili, Tomato, Ubi Kayu Keledek & Jagung

31 MEI 2016

08 JUN 2015

(DATO' AHMAD ZAKARIA BIN MOHAMAD SIDEK)
Ketua Pengarah
JABATAN PERTANIAN MALAYSIA

BIOFERTILIZER ACHIEVEMENT

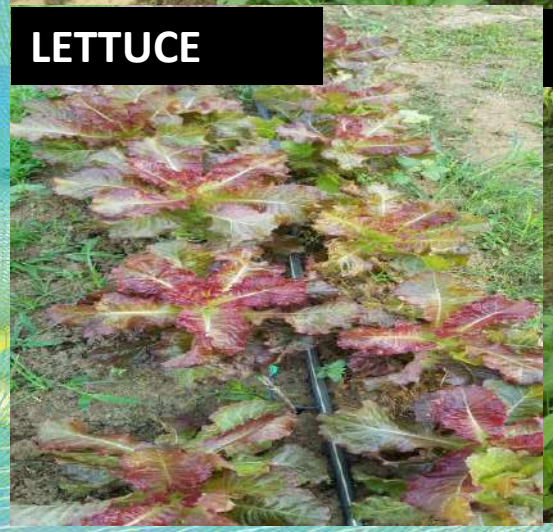
IP Trade Secret : PT2012/05/0080

Has been comerciallized with local fertilizer company

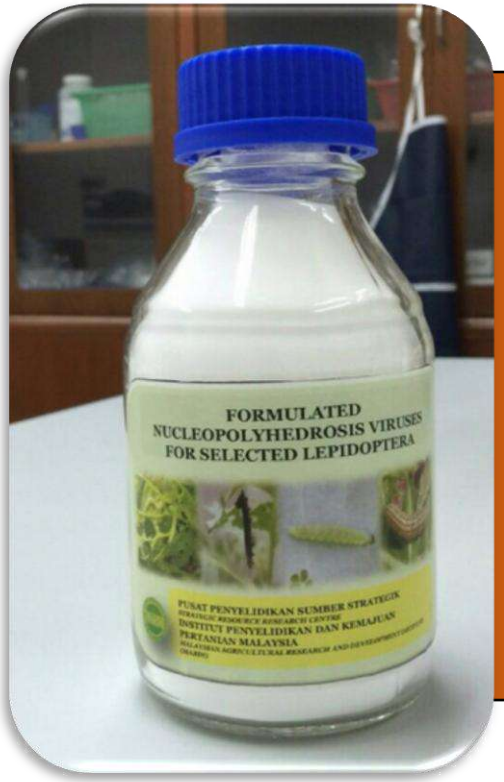
Greenearth INTL Holdings Sdn Bhd

- Cost effective fertilizer affordable for small and large scale farmers
- Macro/micronutrient, arang bio, NPK bio, plant enzyme, amino acid, zeolite and microbe

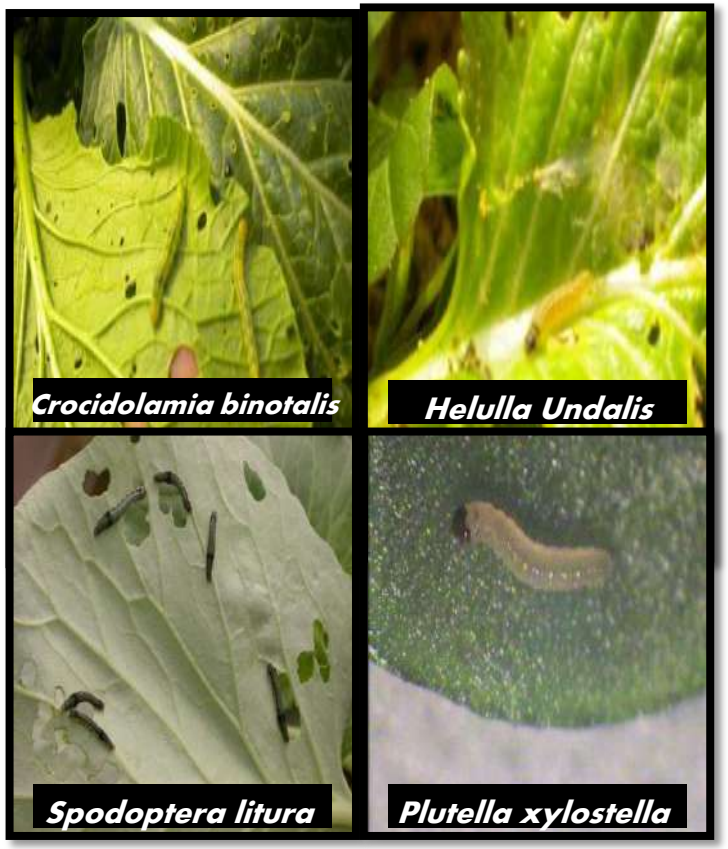
APPLICATION OF BIO FERTLIZERS ON VEGETABLES IN MARDI ORGANIC FARM



BIOPESTICIDE DEVELOPED BY MARDI TO CONTROL CRUCIFER LEPIDOPTERAN PEST



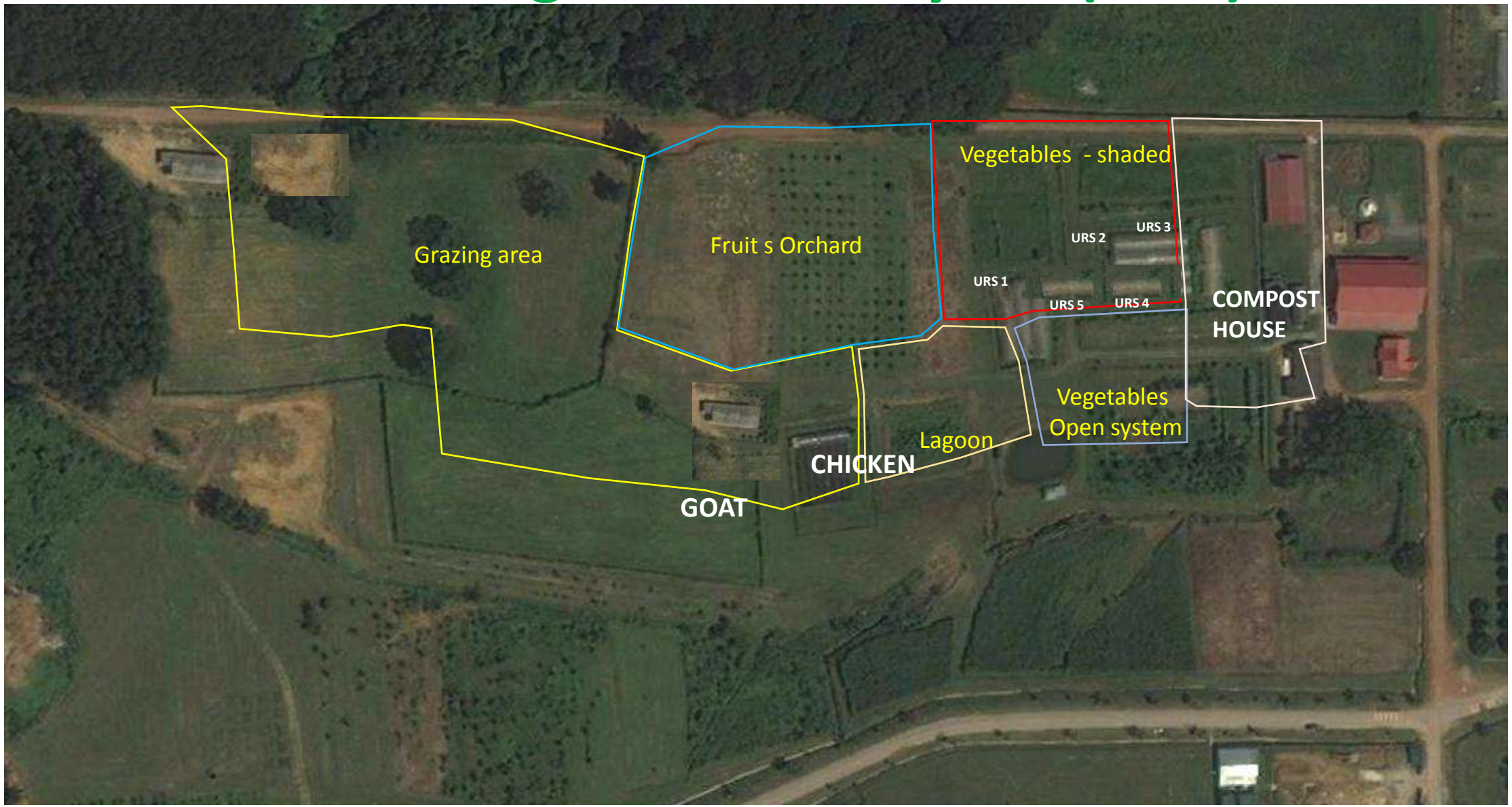
BIOPESTICIDE (FMNPV)



Ecological engineering

- increase the population of natural enemies
- control insect pest
- increase activity of soil biology
- conserve the environment

MARDI Organic Farm layout (7 ha)



Research plot (cabbage)


Leafy vegetable and legumes

Eggplant

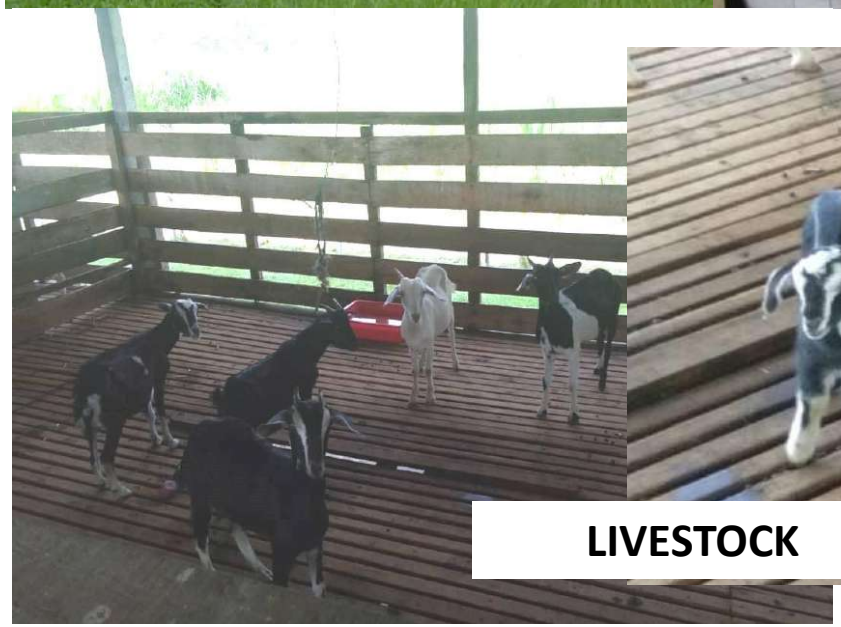
Chilli

Kale

Banana

Tomato

COMPOST HOUSE



LIVESTOCK

VERMICOMPOST

Activities and visitors from local and international

INDIA

UiTM

VIETNAM

MARDI ORGANIZED SEMINAR KEBANGSAAN PERTANIAN ORGANIK 2015 (SKOR2015)

WE WILL BE BACK NEXT YEAR, 2019!!

MARDI

moa INCORPORATED
KEMENTERIAN PERTANIAN DAN INDUSTRI ASAS TANI


02. 06. 2015

THANK YOU