



How do we feed ourselves in the future?

Organic will be the answer for sustainable agriculture?

By Group B

Background



Sustainable agriculture

- **Sustainable agriculture** is the act of farming using principles of **ecology**, the study of relationships between organisms and their environment. It has been defined as "an integrated system of plant and animal production practices having a site-specific application that will last over the long term" For Example:
- Satisfy human food and fiber needs
- Enhance environmental quality and the natural resource base upon which the agricultural economy depends
- Make the most efficient use of **non-renewable resources** and on-farm resources and integrate, where appropriate, natural biological cycles and controls
- Sustain the economic viability of farm operations
- Enhance the quality of life for farmers and society as a whole

Buangga Subak Area

- Subak is a traditional management agriculture in Bali especially about the water management and implementation.
- Subak Buangga has a land area of 148 ha, divided into two agriculture locations.
- Organic area has an area of 48 ha, in organic area, farmers grow of Ciherang varieties, because it feels good.
- Conventional area has a land of 100 ha.

Buangga subak

- Organic and conventional vegetable is cultivated in Buangga



Organic



Conventional

Organic Agriculture

- 1 types of varieties cultivate in Buangga subak
- Organic system has an area of 48 ha, in organic area, farmers grow of Ciherang varieties, because it tastes good.
- Organic farming started at 2007 and has received a certificate of LeSOS at 2013.

Conventional Agriculture

- Conventional area has a land of 100 ha.
- Farmer used a more chemical fertilization and pesticide.
- Higher yield but the product may contain chemical residues

Sampling site in Buangga subak

Organic soil
(from post harvest land)



Conventional soil
(from rice field)



Equipments

Dr. Soil

Methodology

Materials

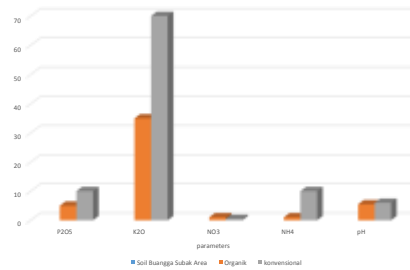
Soil from Buangga Subak
(Organic & conventional)

Results Of Organic

pH **NO₃-N** **P₂O₅**

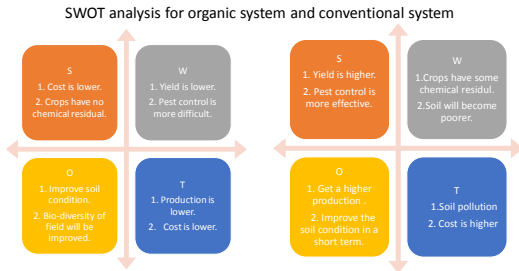
Org Con Org Con Org Con

K₂O **NH₄-N**



No	Soil Sample	Parameters				
		P ₂ O ₅	K ₂ O	NO ₃	NH ₄	pH
Soil Buangga Subak Area						
1	Organik	5	35	1	1	5.5
2	Convensional	10	70	0.5	10	6

Discussion



Conclusion

- It's clear that organic system is a solution to improve the condition of soil and bio-diversity of field, but lower production will not be acceptable for the developing world. Based on this, it's important to find a balance of conventional system and organic system to get the most common good for the public.
- Since some technology like transgene and hybridize can get some new variety of crops to answer this question which we are searching for decades," How do we feed ourselves without causing any damage to the environment and finally promote our agriculture into sustainable agriculture?"

Conclusion

- Since population was booming up in the past few decades, traditional organic farming can't meet the demand of food for the human beings. With the development of chemical science, the application of chemical products into agriculture lead to huge improvement of production and establish the foundation of modern agriculture.
- For recently research, conventional system will lead to some damage to the soil and chemical residual was found in crops which will lead to some damage to human health. Based on this, organic system as a solution to these problems is going to attach the attention of researchers.
- But still now, organic system shows lower yield and more difficulty of pest control which lead to sharp discussion about the problem of production and healthy of crops.

