Garibay, Salvador; Amador, Manuel; Castro, Jonathan and , Lukas Kilcher (2008) Organic agriculture and climate change in developing countries. [oral]

Presentation at BioFach Congress, NürnbergMesse, Nuremberg, Germany, February 21-24, 2008.

Organic agriculture and climate change in developing countries

› Salvador Garibay[1], Manuel Amador[2], Jonathan Castro[2] and Lukas Kilcher[1]

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Nicaragua organic production

1. Coffee
   - 10% organic (13,100 ha)
   - 3,500 small producers
   - 90% export to EU, USA
2. Sesame
3. Cocoa
4. Cashew nuts
5. Vegetables
6. Cattle production
7. Honey

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Nicaragua investigation on climate change

- Legal framework for environmental services
- Studies on carbon sequestration and carbon emissions in agriculture, forest and industry
- No investigation on organic agriculture and climate change

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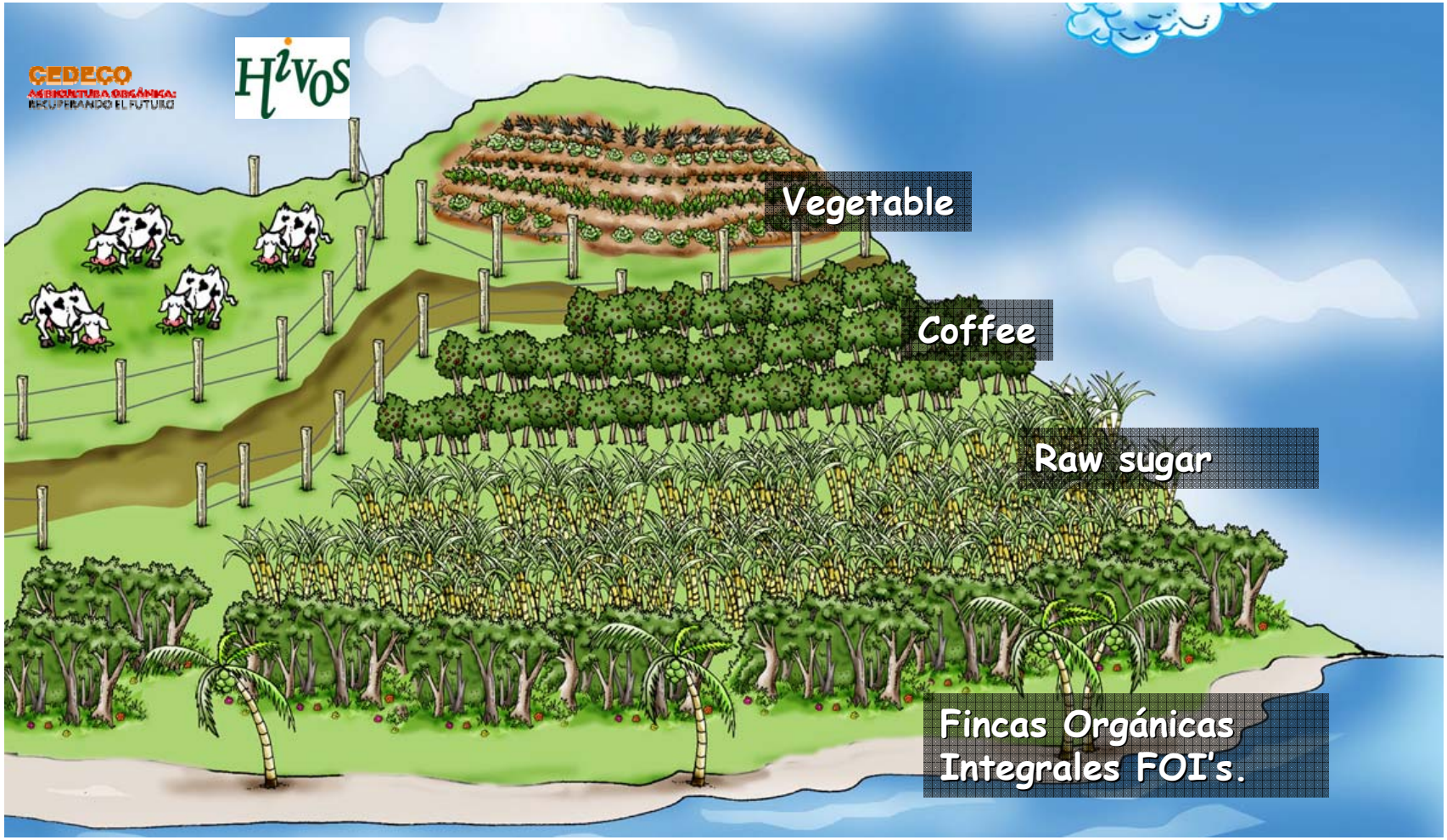
Background investigation since 2004 (Costa Rica)



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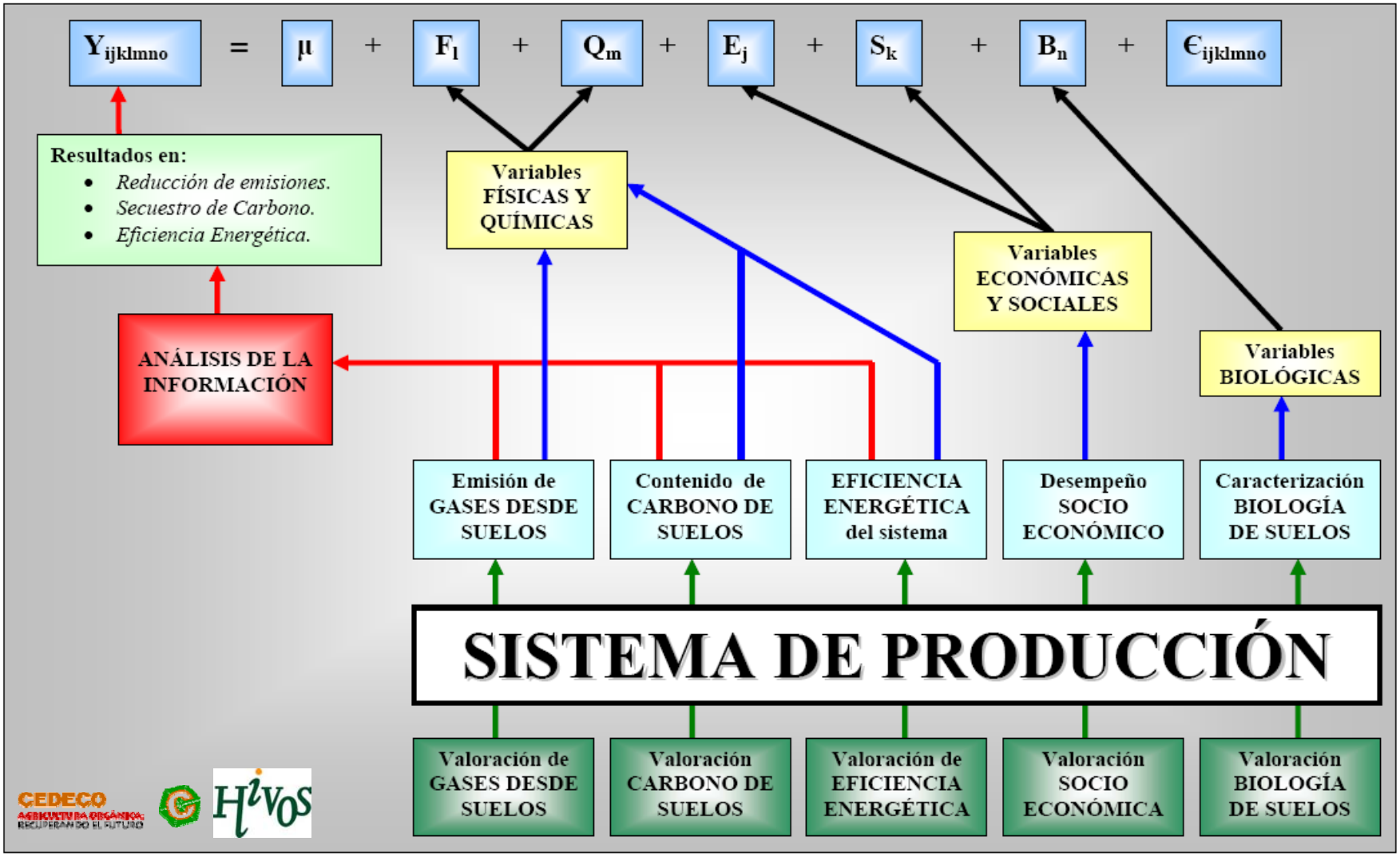
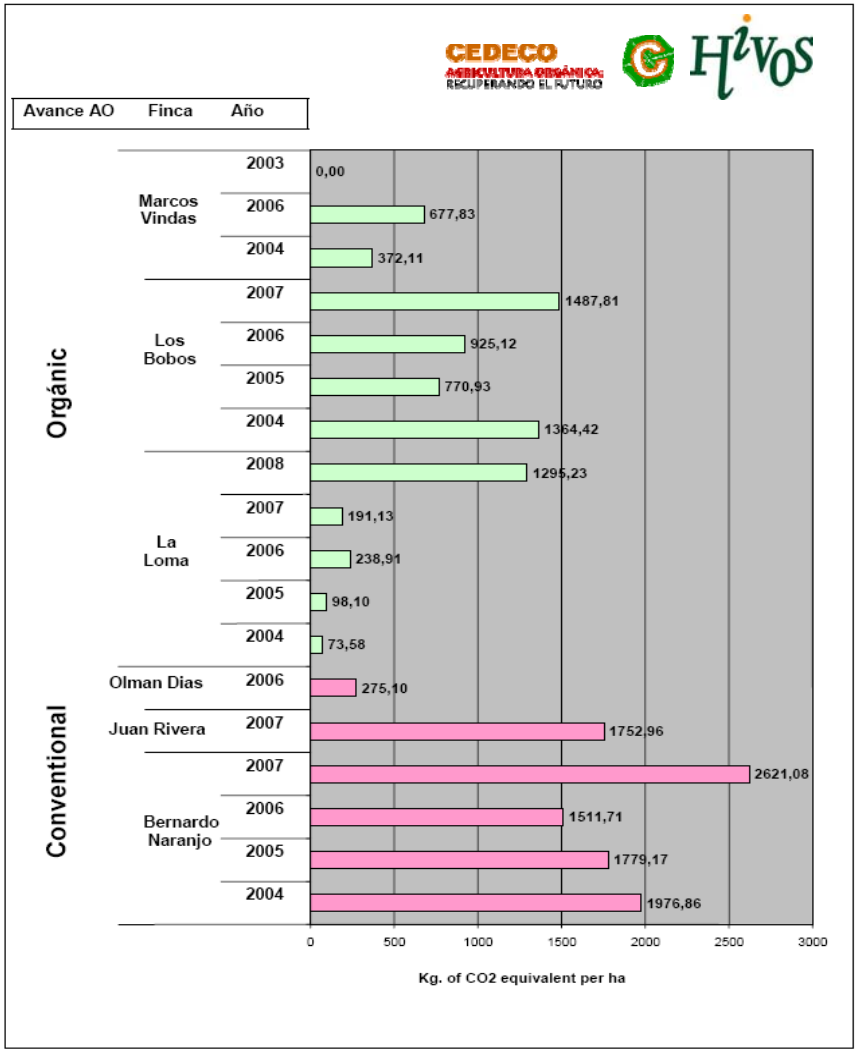
Theoretical model



GHG emissions from soils under different coffee production systems

- Organic coffee production reduces GHG emissions of 1 ton of Ceq/ha
- 13,000 ton of Ceq/ha for all organic coffee in Nicaragua
- In the VCM is a value of 300,000 USD yearly for the 3,500 small farmers



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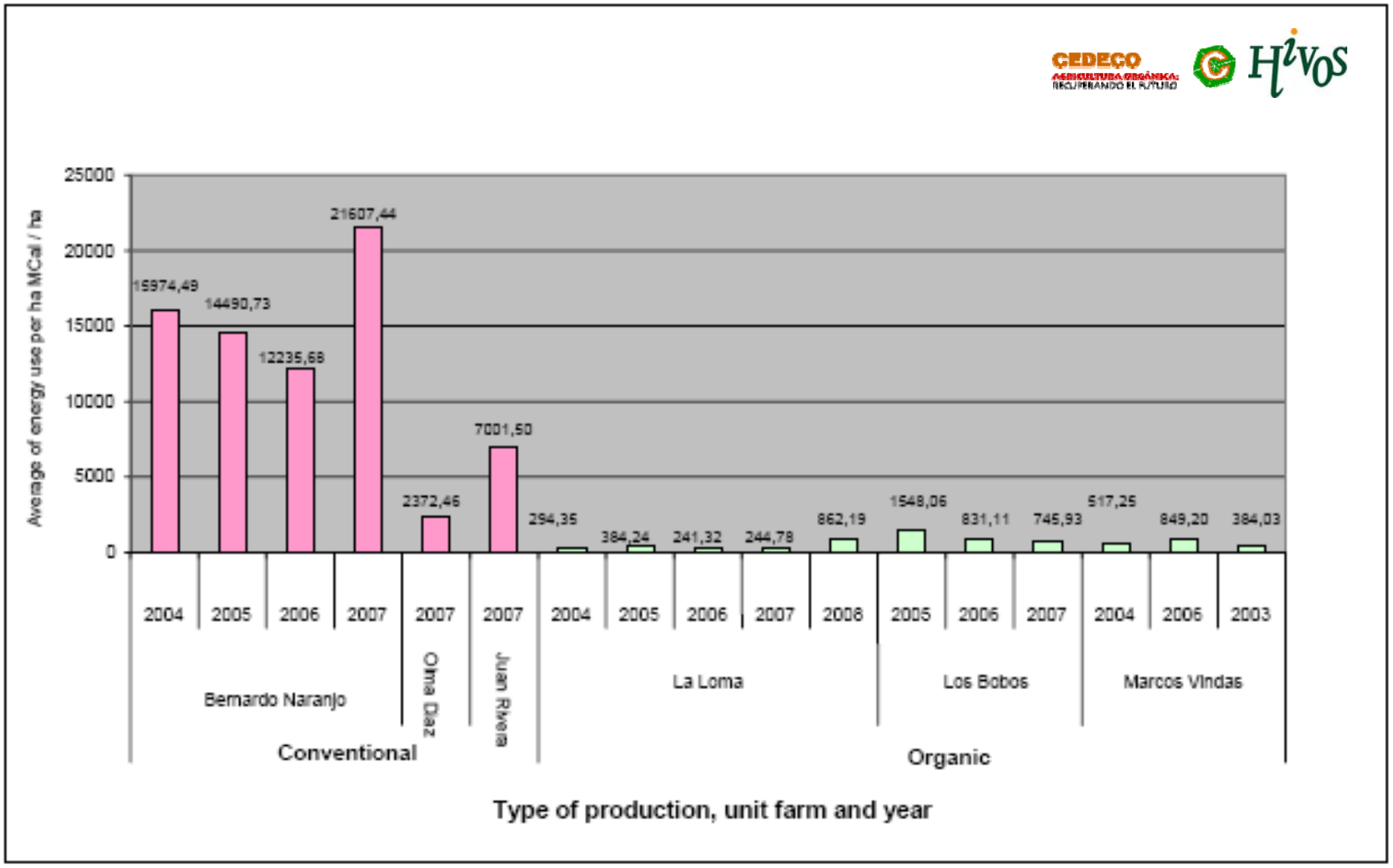
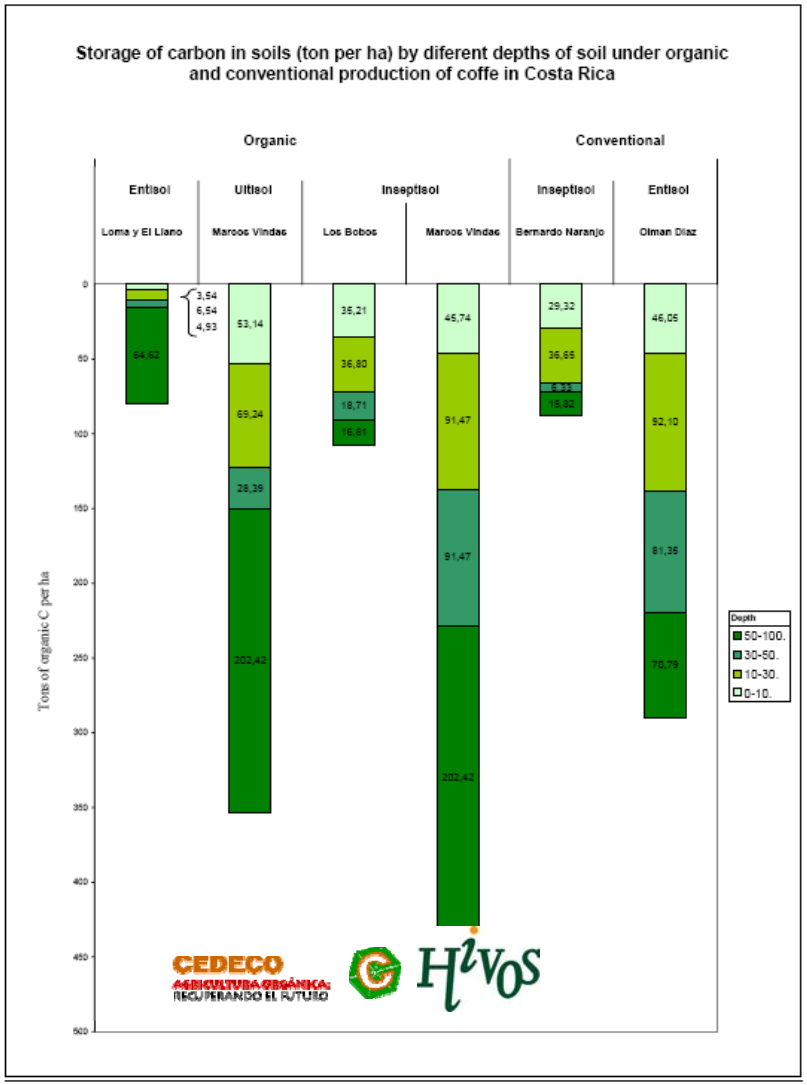
Energy efficiency of organic coffee production

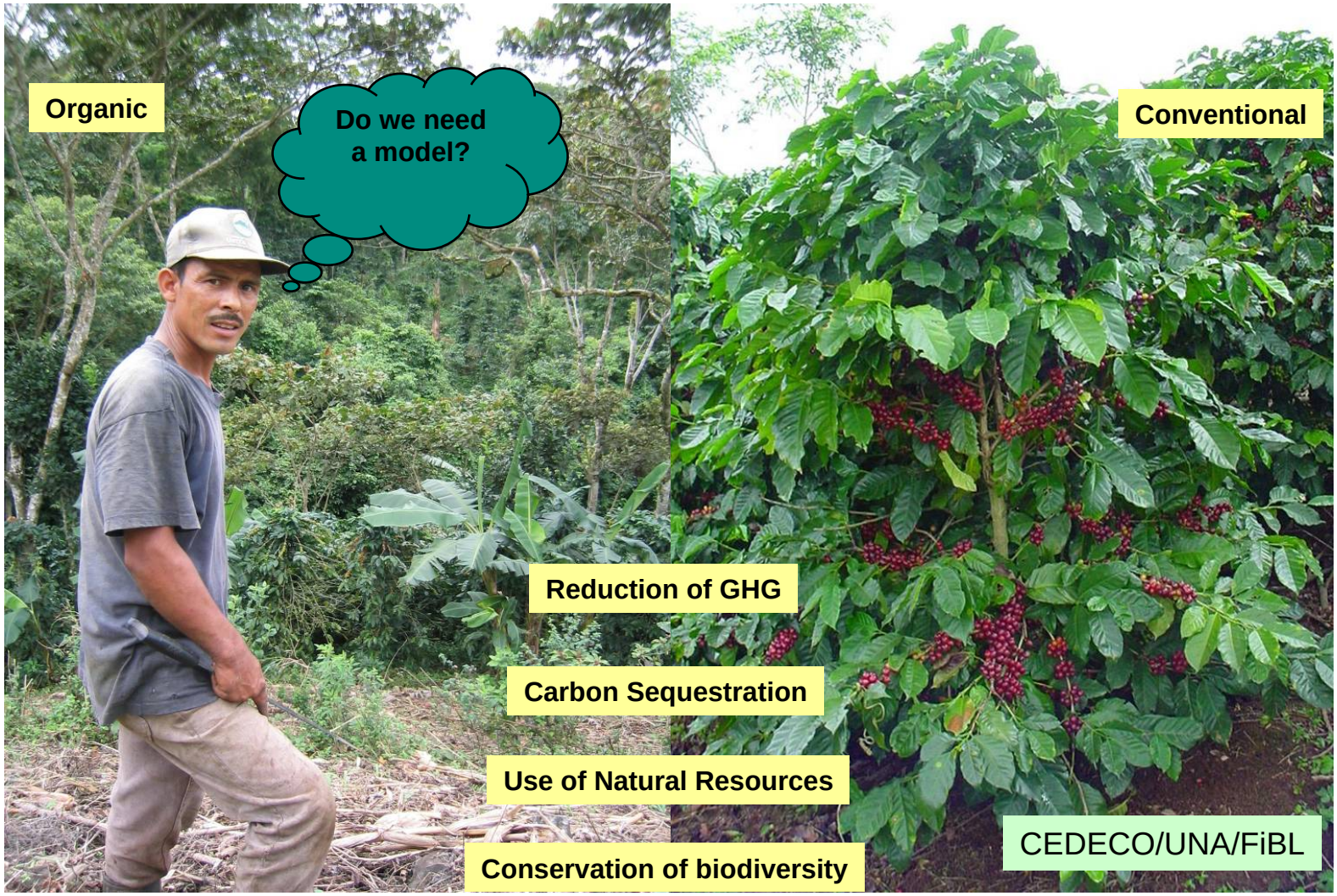


Carbon sequestration under organic coffee production

- Carbon sequestration under organic coffee production is higher in the depth soil layers than in conventional coffee



Assessment and improvement of climate relevant techniques in organic coffee production



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Assessment and improvement of climate relevant techniques in organic coffee production

- Assess possible environmental services of organic coffee production systems

Carbon Sequestration

Reduction of GHG

Water use and conservation

Conservation of biodiversity

Assessment and improvement of climate relevant techniques in organic coffee production

- Optimize and enhance benefits of organic coffee production systems in all its **life cycle to and throughout the value chain**

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Strategies and objectives

1. **Research:** on station and on farm
2. **Dissemination:** capacity building, exchange of experience, promotion, multiplication, networking
3. **Policy dialog**

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Process

1. Participatory process
2. Linking stakeholders: producers, authorities, NGO'S research centres, etc.
3. Generating local Know-how

How development & cooperation can promote organic agriculture as a solution for climate mitigation

- Set up projects with small farmers groups to improve specific management techniques:
  - Fertility and carbon sequestration
  - Compost production
  - Biogas and energy production
  - Management of the biodiversity
  - Management of the waste and natural resources
- Research, Dissemination and policy dialogue
- Organic agriculture as excellent tool to mitigate climate change

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