

Fertility management in OGH: principles and standards

Fabio Tittarelli
CRA-RPS, Rome (IT)



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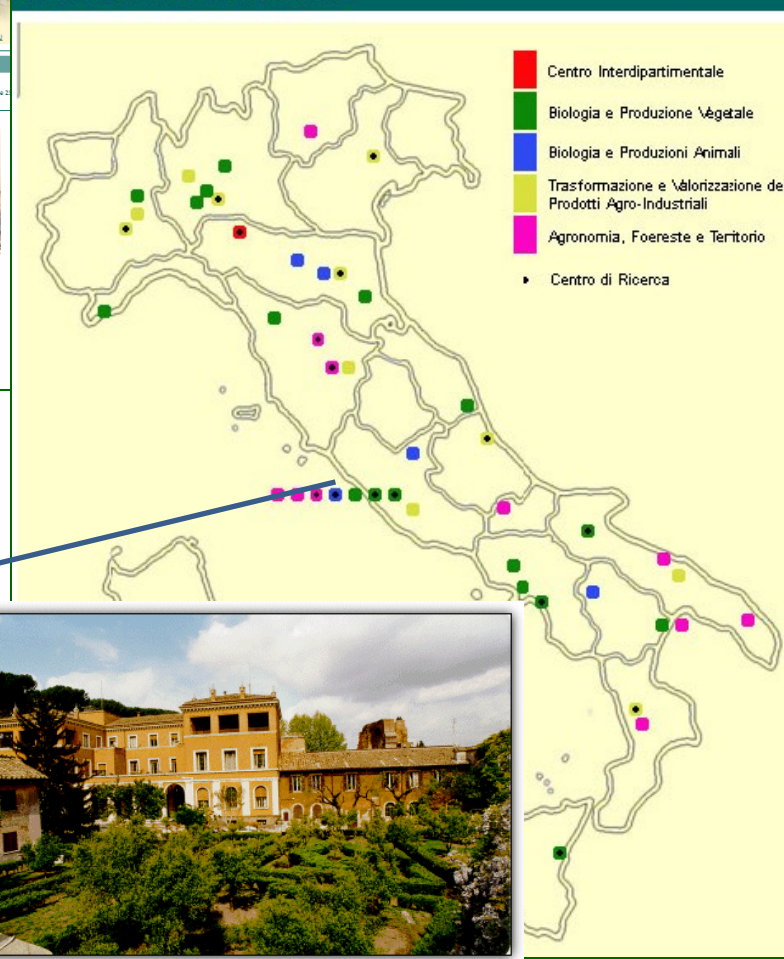
- **COST Action FA 1105 - Biogreenhouse**
- **Organic greenhouse production in Europe**
- **Report on Greenhouse Production**



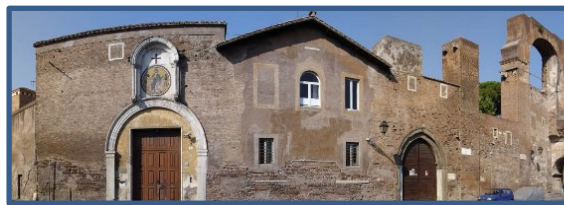
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COST Action FA

Soil fertility, Suppressiveness & Water management for organic agriculture: constraints and opportunities for greenhouse horticultural production



What is COST?

COST – European Cooperation in Science and Technology – is one of the longest-running European instruments supporting cooperation among scientists and researchers across Europe.

COST is also the first and widest European intergovernmental network for coordination of nationally funded research activities.

History

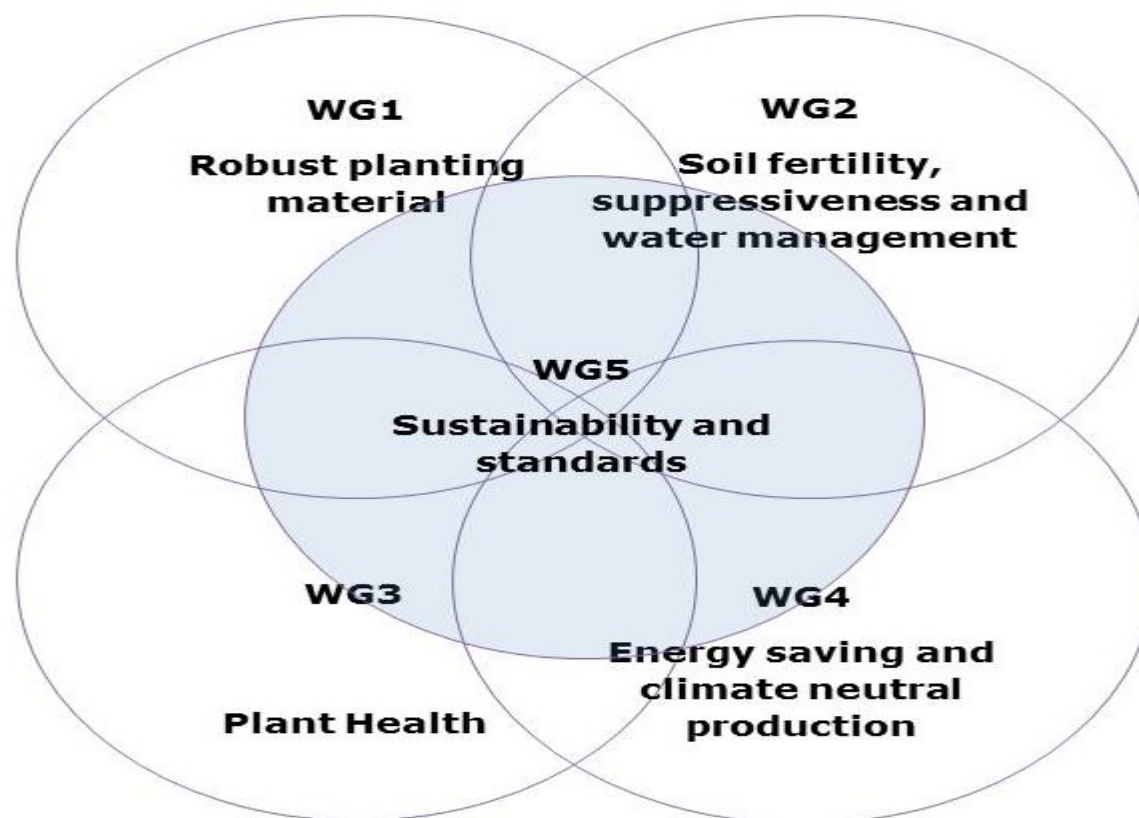
- 2008:Modena
- 2009 Cologne
- 2010 Bleiswijk1st Conference



Action FA1105: Writing team

- Coordination and submission *Rob Meijer*
- Robust planting material
Bettina Billmann, Wolfgang Palme and Martin Koller
- Soil fertility, Suppressiveness and Water management *Fabio Tittarelli and Martine Dorais*
- Plant health
Gerben Messelink and Justine Dewitte
- Energy saving and Climate neutral production
Nico Vergote and Cecilia Stanghellini
- Sustainability and Standards
Ulrich Schmutz

Key topic areas and need for integrated approach



Rob Meijer, Martin Koller, Fabio Tittarelli, Gerben Messelink, Nico Vergote and Ulrich Schmutz

COST FA 1105 Meeting Brussels, 19-20 April 2012



Organic greenhouse horticulture (OGH)(i.e the production in greenhouses or polytunnels) in the EU should improve its sustainability, production and productivity. Emissions of nutrients and its footprint should be reduced. Production and productivity are too low to meet the demand of the society.

The scientific challenges are -

- to design sustainable irrigation and fertilization strategies
- to reveal the mechanisms of resilience, robustness and suppressiveness for the management of pests and diseases
- to integrate crop management, energy saving, renewable energy sources and new techniques and combinations with other activities
- business to realize climate neutral production.

This COST Action coordinates, strengthens and focuses the activities of the partners. It improves the communication, offers a common agenda, more and better knowledge for less money, sharing new techniques, an improved dissemination to OGH, basis for further collaboration in joint research proposals and support in the development of EU standards for OGH.



News & Events

[Feeding Knowledge Project](#)

Francesco Ceglie and Habte Mihreteab report

[EGTOP report on organic greenhouse production](#)

You can find the full report [here](#).

[International Symposium on Organic Greenhouse Horticulture, 28.-31. October in Avignon \(France\)](#)

In the end of this month, the 2nd International Symposium for Organic Greenhouse Horticulture will be held in Avignon, France.

[Survey on energy use in organic greenhouse production](#)

As part of this project we need your help!

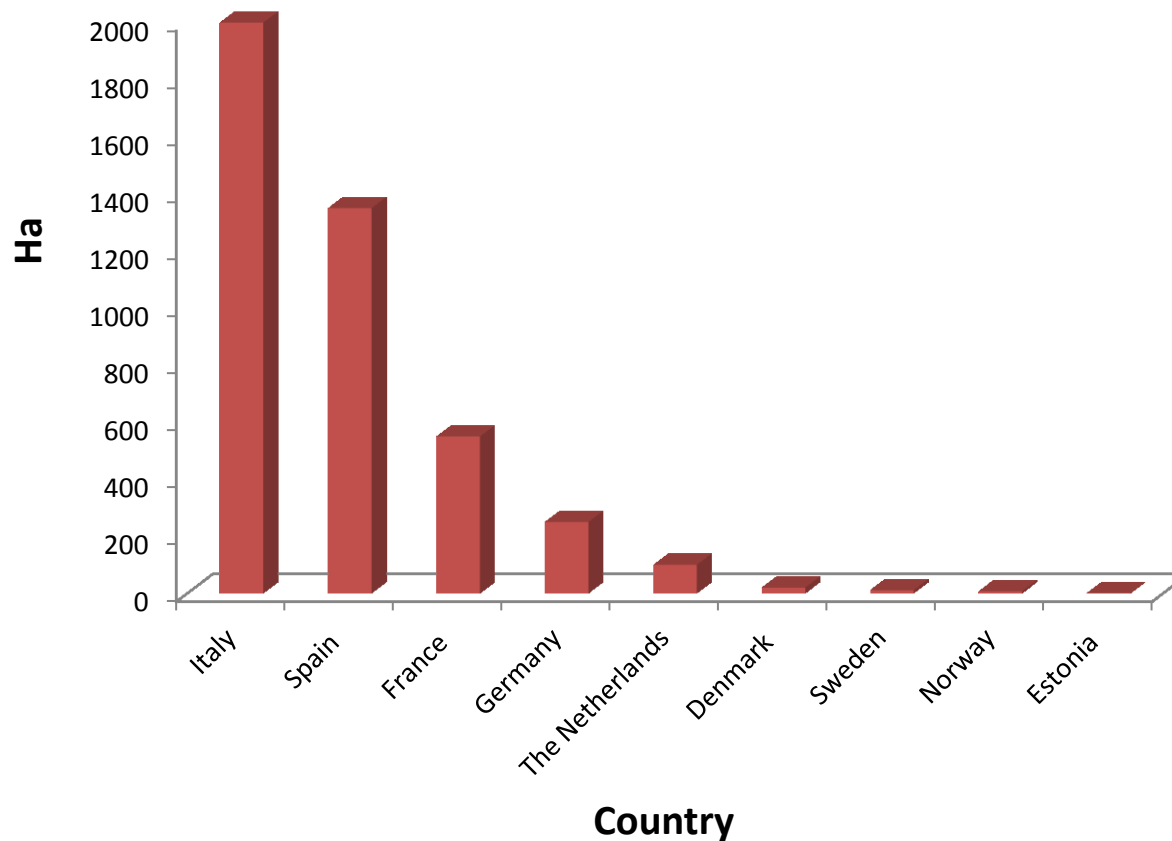
[Core Group Meeting 15. + 16. April](#)

The core group project partners have met on Monday and Tuesday (15+16 April) in Kruishoutem (Belgium)

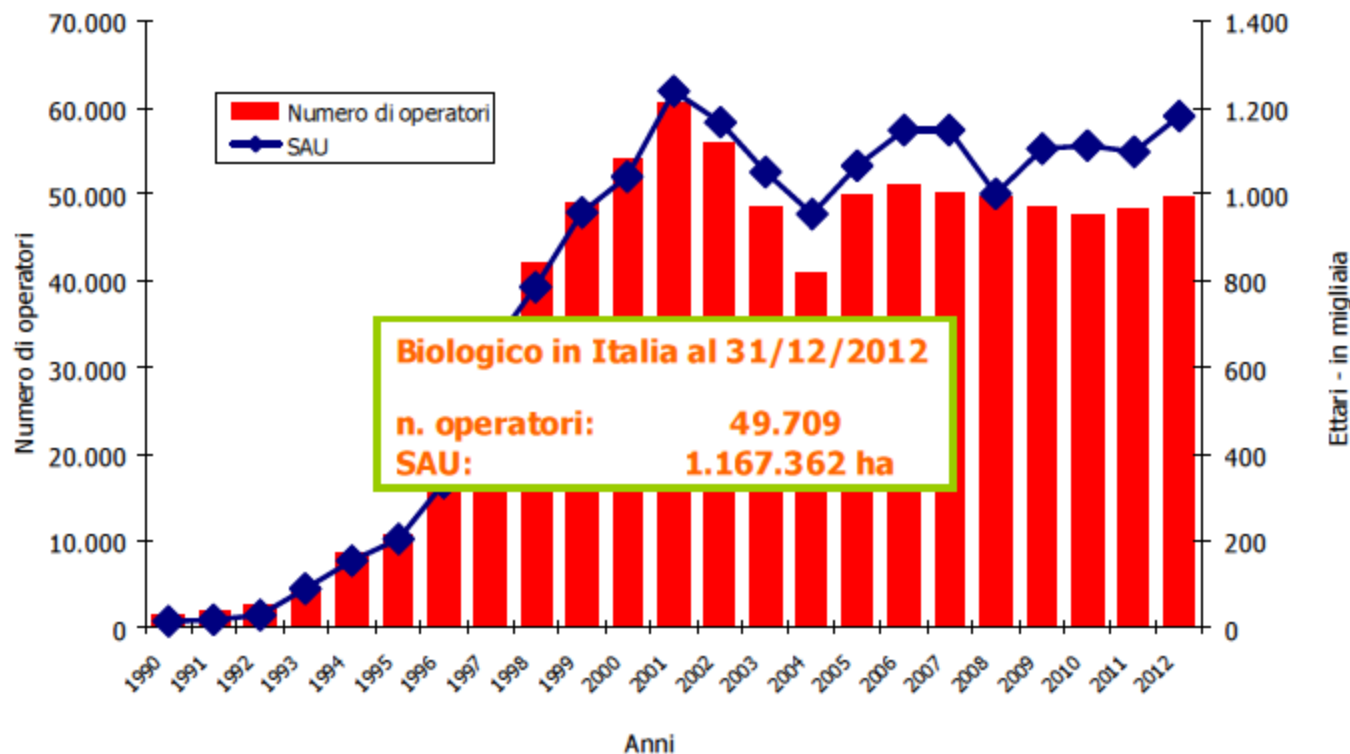
Participating Countries

AT, BE, CH, CY, DE, DK, EE, ES, FI, FR, IL, IS, IT, MT, NL, NO, PL, RO, SI, SE, TR, UK

Statistics on organic greenhouse in Europe (estimated values)



Andamento di operatori e superfici in Italia dal 1990 al 2012



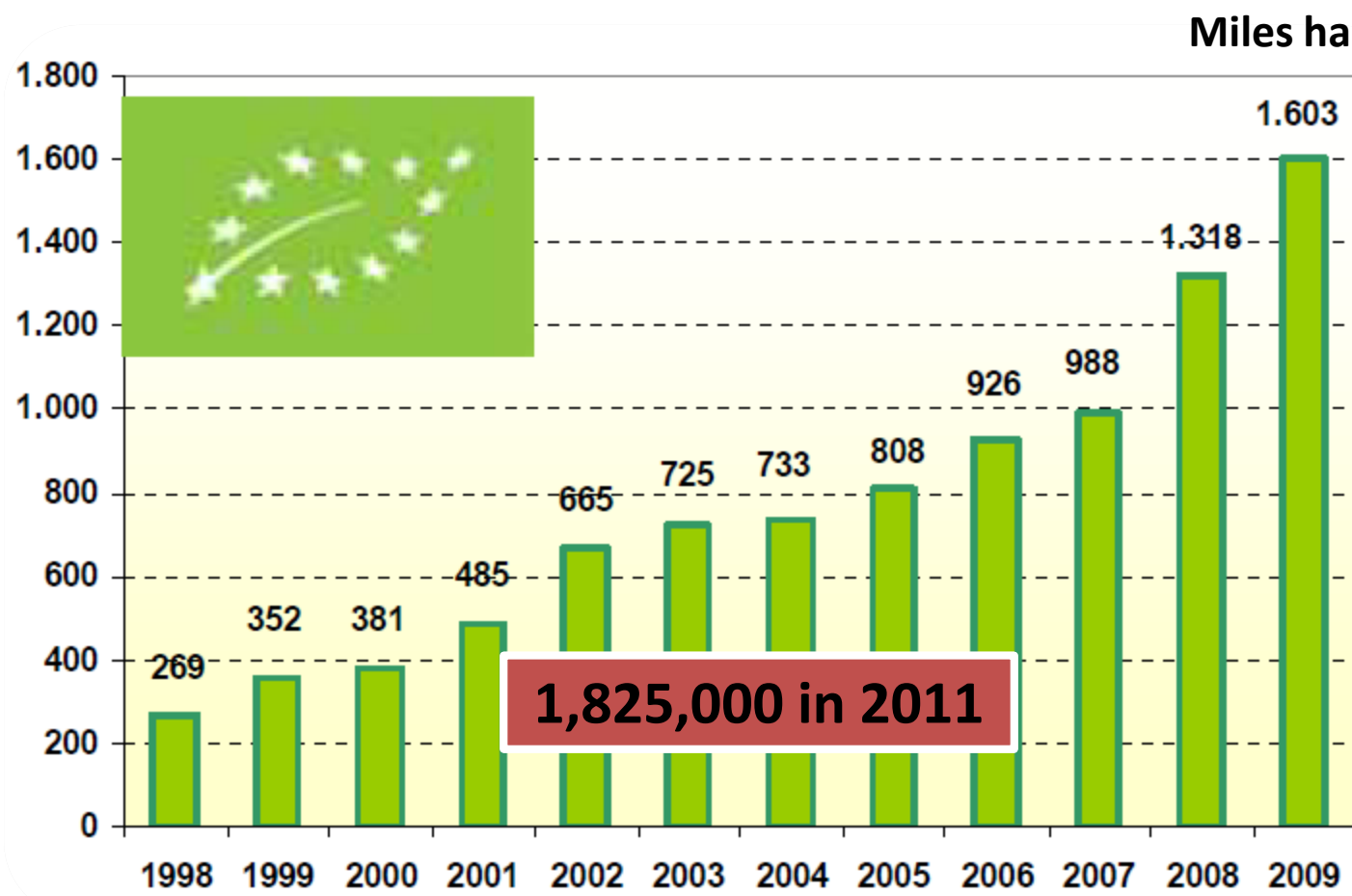
Dati 1990-1992: elaborazioni SINAB su stime diverse.

Dati 1993-2012: MiPAAF;

Elaborazioni: Nomisma (1993), IFOAM (1994), BioBank (1995-1998), SINAB (1999-2012).

1. Organic horticultural sector in Spain

Organic farming in Spain



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the COST Office through a European Commission contract

Photo: Moral, 2012





Photo: Poldma, 2012



Photo: Poldma, 2012







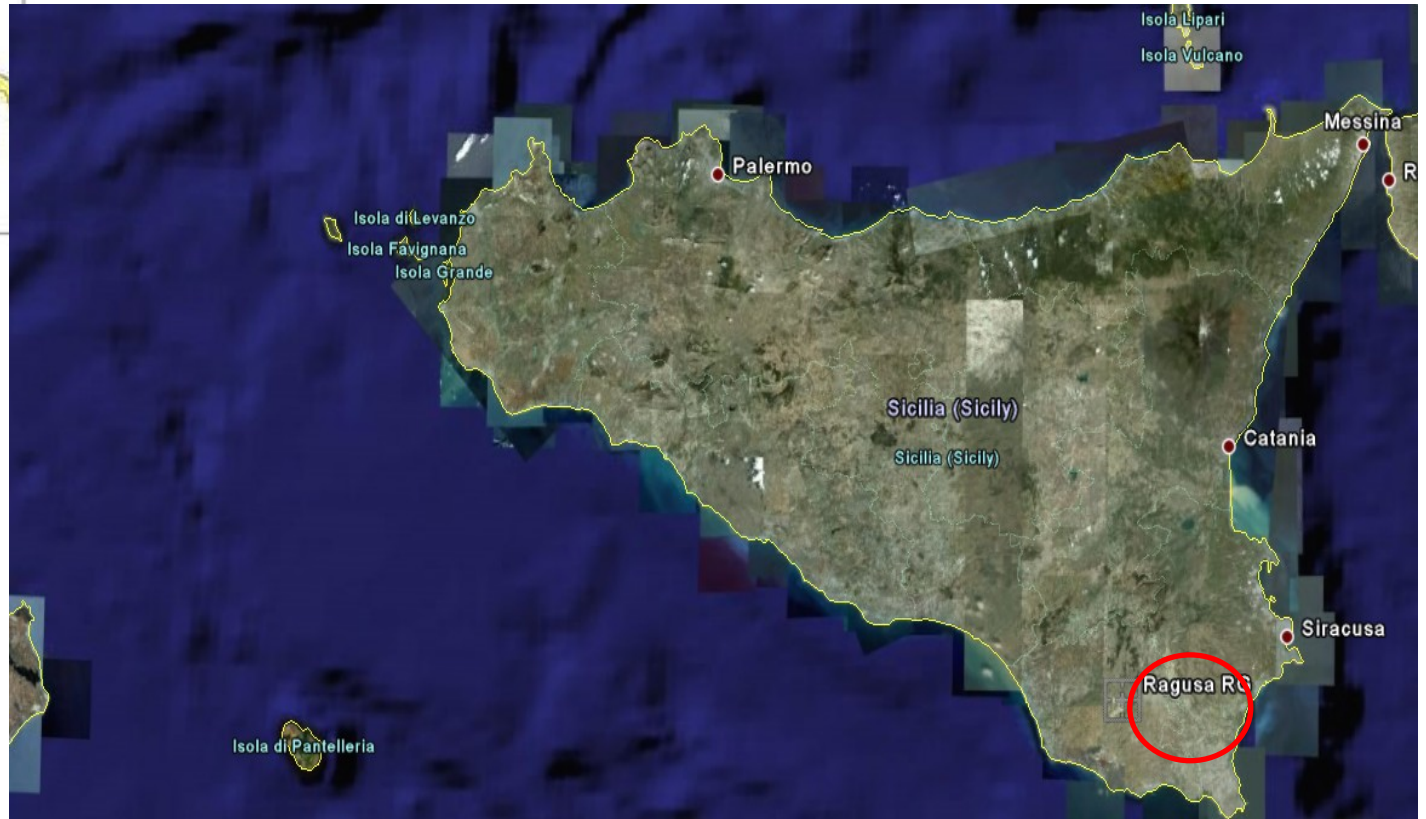


IT (2012)

- Organically managed (in total)
1,167,362 ha (8%)
- Conventional vegetables
688,810 ha
- Organic vegetables
24,643 ha
- Conventional greenhouses
~ 33,000 ha
- Organic greenhouses
official data not available
~ 2,000 ha (SINAB)



SICILIA



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COST Action FA 1105: Training School - 15-19 Sept 2014 - CIHEAM – IAMB
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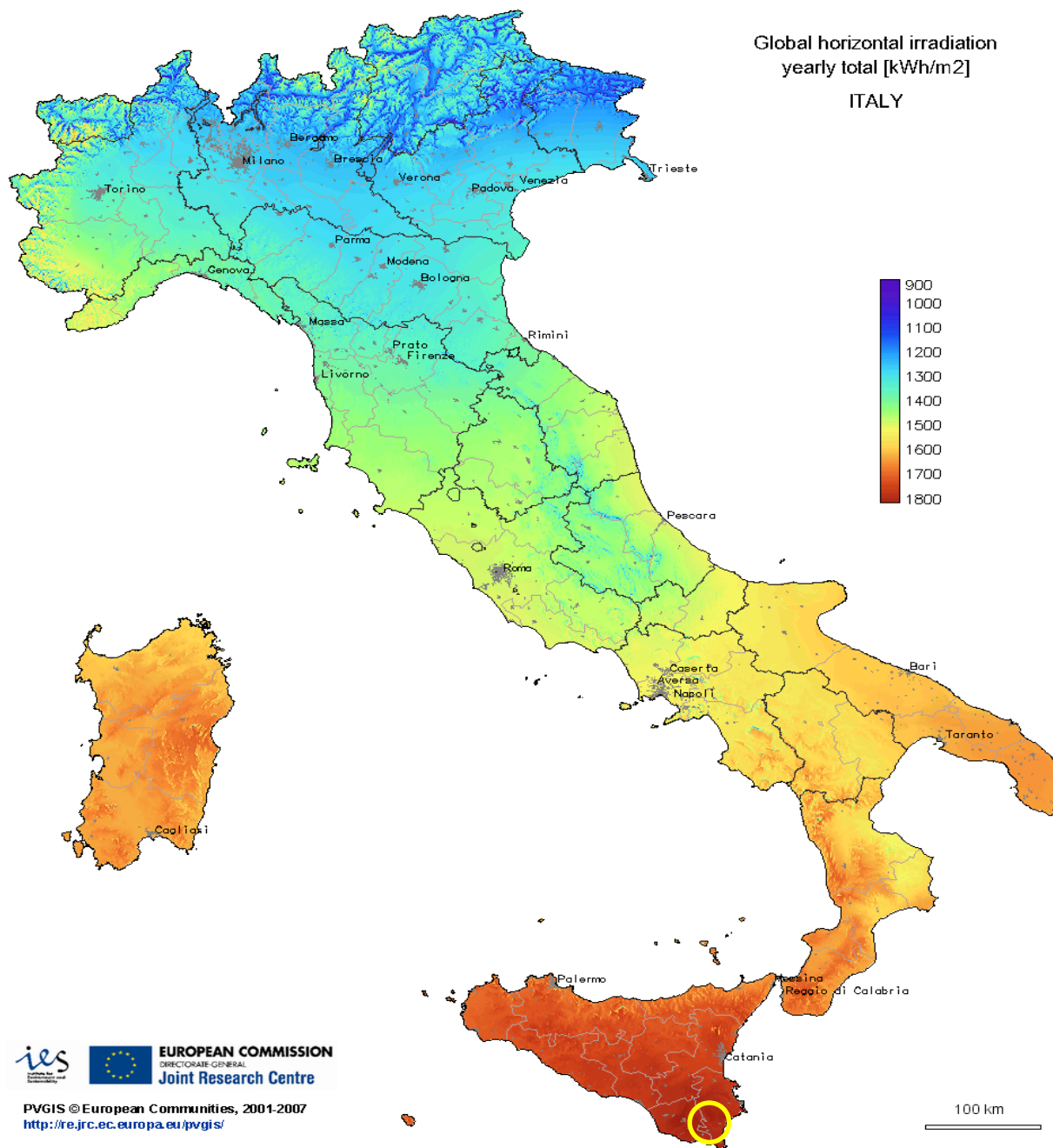


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Global horizontal irradiation
yearly total [kWh/m²]

ITALY





• Biddemi

• Casazze

Marina di Ragusa

• Pescazze

• Santa Barbara

• Pellegrino

• Casuzze

Image © 2012 GeoEye
Image © 2012 TerraMetrics
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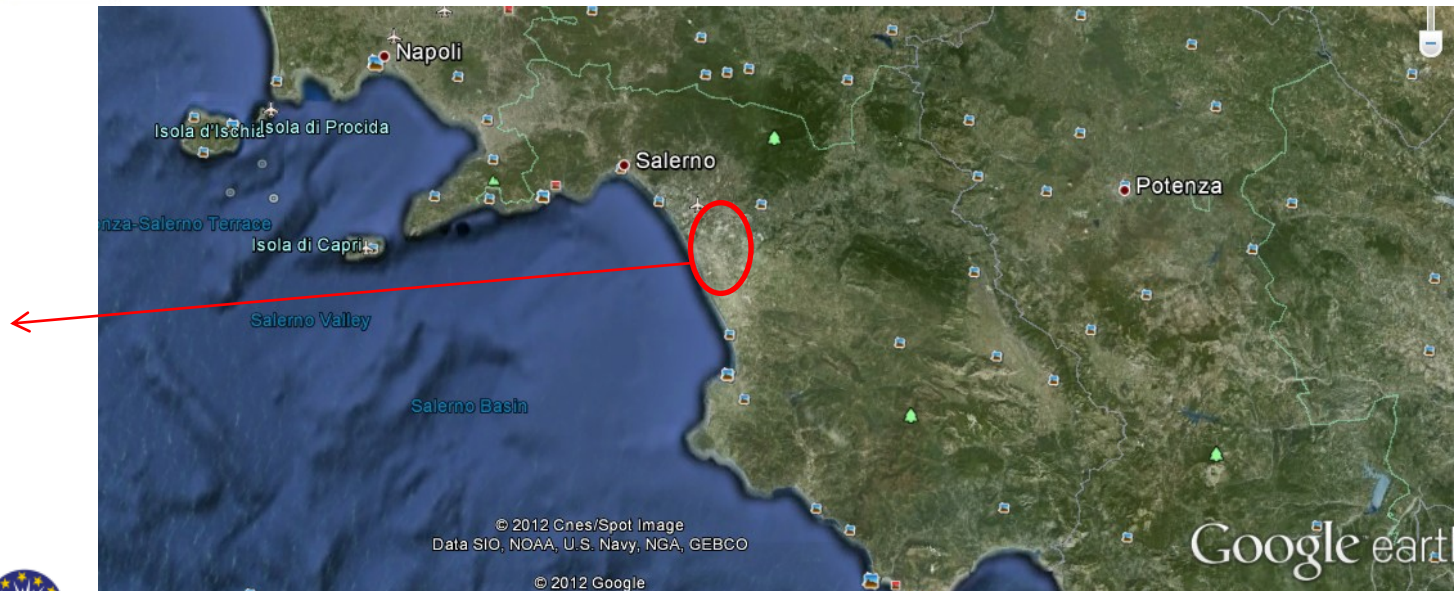
Google earth

CAMPANIA



Photo by Antoniom

Piana del Sele



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Verdesca

Tavernola

San Mattia

Fos

Parco Russo

San Gaetano

San Emilio

Santa Rosa

Santa Lucia Inferiore

Torre de

Ill Azienda

pineta Nuova

Image © 2012 GeoEye

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Google earth





PUGLIA



LAZIO



MAIN CULTIVATED CROPS

- Solanacea (tomato, pepper, eggplant)
- Cucurbitacea (zucchini, melon, cucumber and watermelon)
- Leafy vegetable (lettuce, spinach, chicory)

Based on these crops, farmers implement simplified short rotation and are reluctant to introduce cover crops



Ministry of Agriculture Decree N. 18354 of 27th of November 2009

on the application of Reg. (CE) n. 834/2007, 889/2008 and 1235/2008 regarding
organic production and labelling

(additional national provisions)

Art. 3 : Plant Production

Crop rotation and green manuring are compulsory
for organic production certification

Soil Fertility Management

Fertilizers applied before transplanting or sowing

- Animal manure (factory farming origin is forbidden)
- On-farm compost (when possible)
- Potassium sulphate
- Magnesium sulphate



After transplanting, fluid organic fertilisers are applied by fertigation

19 Sept 2014 - CIHEAM – IAMB

ent for organic agriculture: constrain
horticultural production



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Is there a debate on the introduction and authorization of a soilless organic vegetable production?

Wide consensus on soil based organic production

Soilless organic vegetable production is not an option

29.9.2010

EN

Official Journal of the European Union

C 262/3

COMMISSION DECISION

of 28 September 2010

appointing the members of the group for technical advice on organic production and drawing up the pool list

(2010/C 262/03)

THE EUROPEAN COMMISSION,

HAS DECIDED AS FOLLOWS:

Having regard to the Treaty on the Functioning of the European Union,

Article 1

The lists in the Annexes to this Decision set out the names of the members of the group and of the pool list. In particular:

Having regard to Commission Decision 2009/427/EC of 3 June 2009 setting up the expert group for technical advice on organic production ⁽¹⁾, and in particular Article 4(2) thereof,

(a) the 13 experts listed in Annex I to this Decision are appointed as permanent members of the group;

Whereas:

(b) the list of members of the pool is also drawn up and consists of 62 experts listed in Annex II to this Decision.

Mandate for technical advice

Plenary EGTOP Meeting



Sub-Group Meeting



Sub-group composition

- Lizzie Melby Jespersen (rapporteur) DK
- Bernhard Speiser CH
- Fabio Tittarelli (chairman) IT
- Roberto Garcia ES
- Roger Hitchings UK
- Eckhard Reiners DE

Standing Committee on Organic Farming (SCOF)

SCOF is one of the committees, which is composed of government representatives, to ensure that Member States have a control on Commission's responsibility of implementing acts

The Report will be discussed, at SCOF level, and will represent the reference point for any further development of a common set of rules.



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Background

- ☐ No specific rules for organic greenhouse production
- ☐ Need to follow the basic principle of organic farming (Art. 3 of Reg. 834/07)
- ☐ “...some non-organic producers... claim to be more sustainable than organic producers” (Blom, 2011)

Outstanding performance

“In the Group’s opinion, it is important that organic greenhouse production has an outstanding performance in these areas (energy, water, soil and organic matter) as they are important aspects of sustainability.”

Highly intensive production

Excessive increases in production intensity threaten the sustainability of some organic greenhouse production

The Group.... recommends a more efficient use of external inputs to maintain the public trust on the sustainability of organic greenhouse production.

Nutrient and soil fertility management

Soil fertility and an active soil ecosystem are the basis for plant nutrition in organic systems

Input – output balance of the nutrients in the rotation

Input shall be calculated on the basis of the total amount of the nutrients applied

Management of soil and crop health

Preventive methods

The maintenance of plant health by preventive measures is a principle of organic farming

Crop rotation

...annual legumes and green manure crops cannot be grown for economic reasons, but shorter term green manure crops including legumes can be grown.

Energy use

Responsible use of energy is an important element of sustainability

In greenhouse context:

☐ Light

☐ Heating

☐ Carbon Dioxide

Heating

... the Group recommends that the heating of greenhouses to assure frost protection to 5°C is allowed without limitation.

Heating to higher temperature is in line with the Organic Regulation if the greenhouse is insulated.

Carbon dioxide

Since CO₂ enrichment is more effective in summer rather than in winter, there is a widespread tendency of burning fossil fuels not only in winter (for heating), but also in summer to obtain CO₂

The Group is concerned that greenhouse owners could be discouraged from switching to renewable energy (geothermal, wind, solar power, etc) because these alternatives do not have the added value of CO₂ emission

Carbon dioxide (Conclusions)

- ☐ *The Group accepts the practice of CO₂ enrichment, but is concerned about the widespread tendency of burning fossil fuels in summer...*
- ☐ *Fossil fuel burning with the main purpose of CO₂ enrichment of greenhouses should not be allowed*
- ☐ *CO₂ enrichment should not discourage energy saving and the use of alternative renewable energy sources*
- ☐ *In the long run, it is recommended that only biomass sources are used for CO₂ rebalancing/enrichment*

Demarcated Beds

Authorities in Finland, Sweden, Norway and Denmark have authorised a practice of growing vegetables in “demarcated beds”

The Group strictly opposes to any enlargement of such practices in organic farming because it is not in line with the objectives and principle of organic farming

THANK YOU FOR YOUR ATTENTION



