Bee health in Europe- Facts & Figures

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RESEARCH CENTER

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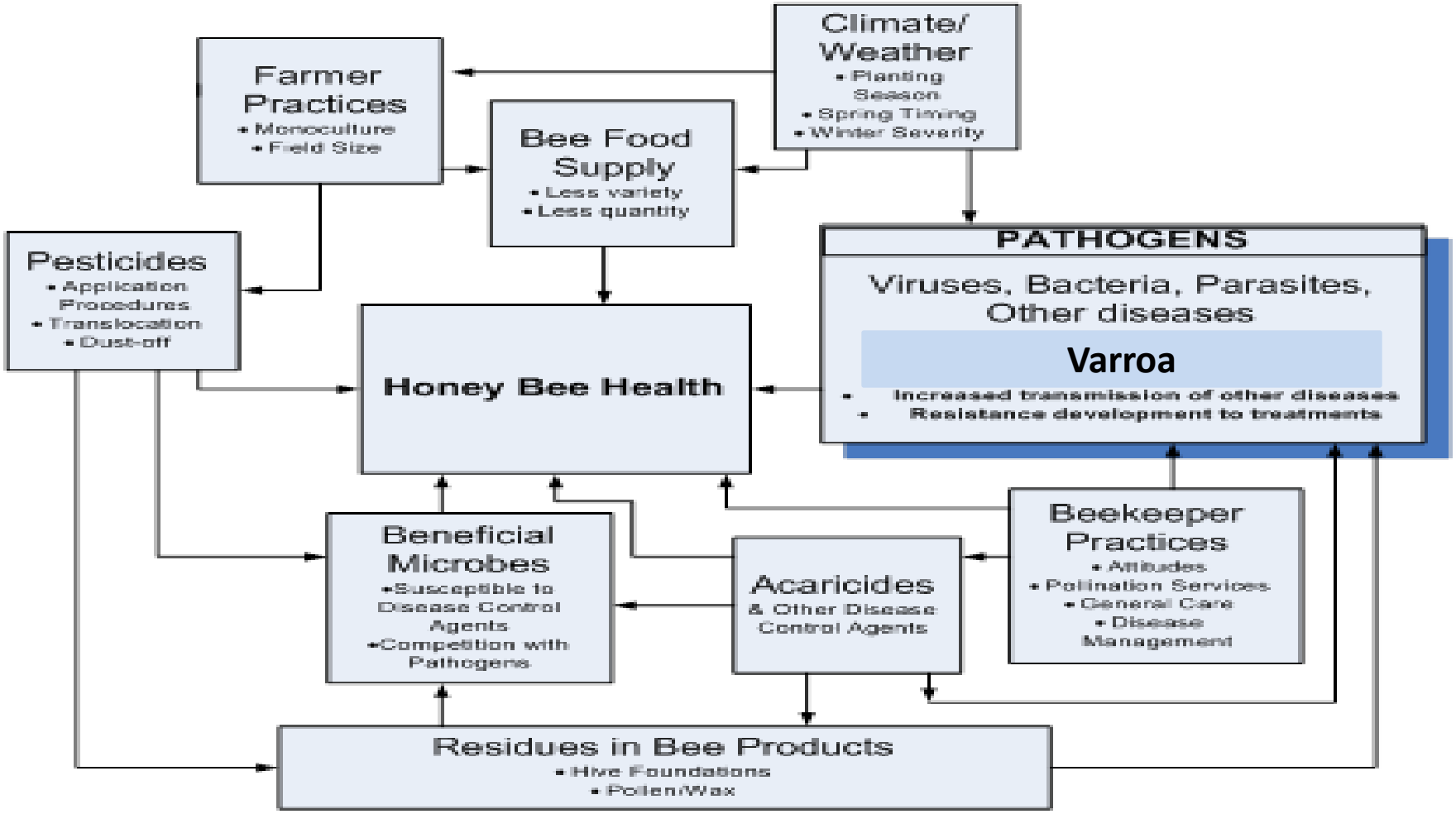
Threats to bee health



Interrelationship of bee health Stressors Adapted from Le Conte *et al*., 2010

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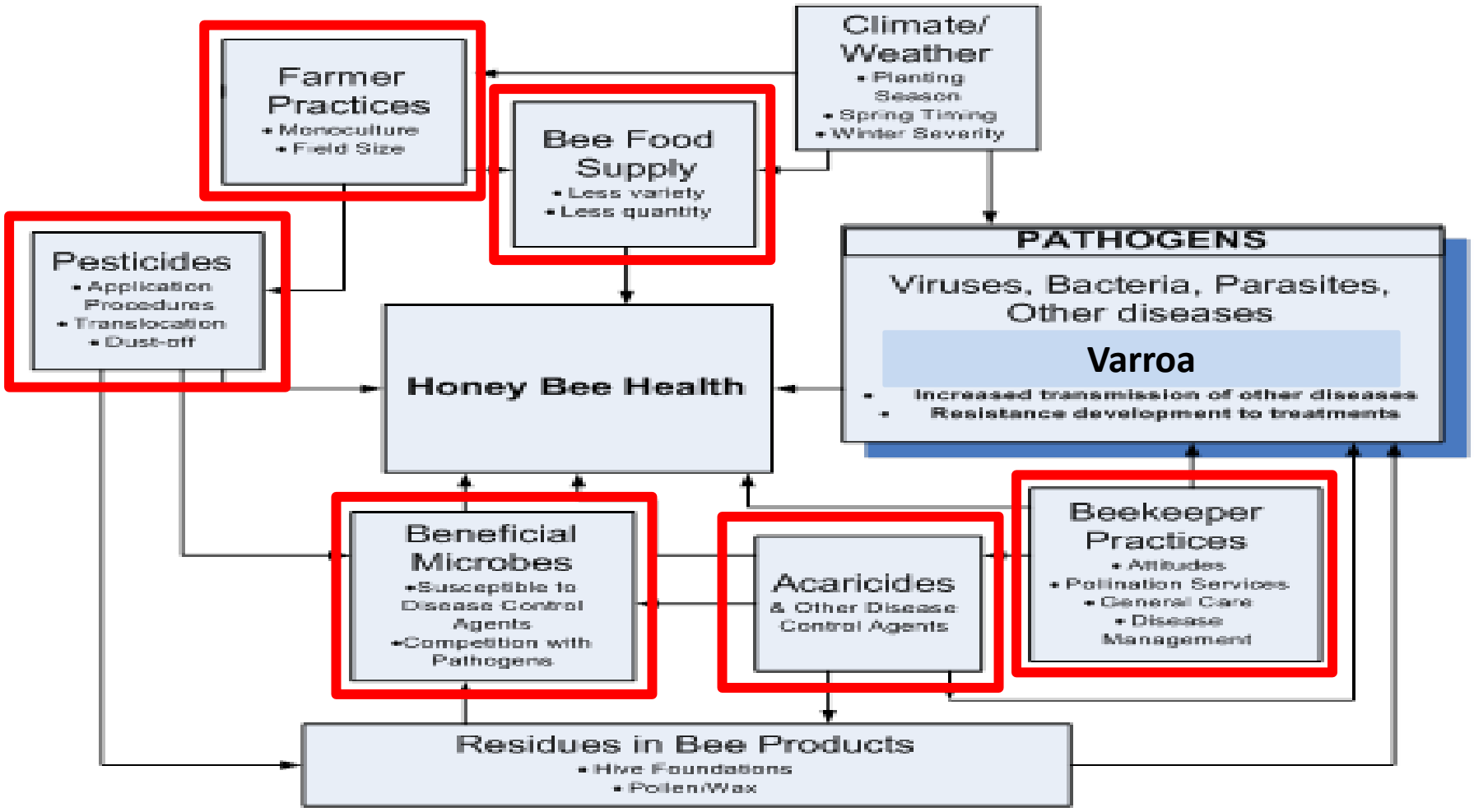
Threats to bee health



Interrelationship of bee health Stressors Adapted from Le Conte *et al*., 2010

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OPERA report – broad overview on

Crossing the lines of research and policy initiatives

- Facts and figures of beekeeping in the EU
- Numbers and Trends in Colony losses
- Factors influencing bee health, e.g. diseases, pesticides, forage availability, colony management…
- Research activities and findings in EU-countries
- National monitorings
- Pesticide Incident monitoring
- Role and activities of international organisations for pesticide regulation- EFSA, OECD, ICPBR..

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Bee health & bee diversity

- COLOSS (Prevention of honey bee COlony LOSSes)
- DEBIMO (Deutsches Bienenmonitoring)
- STEP-EU (Status and Trends of European Pollinators)
- NSERC-(Canpolin Canadian Pollination initiative)
- FAO (Food and Drug Administration)
- National monitorings
- Other research activities

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Colony losses in Europe

Country	Number of Operations	Total number of colonies in October	Median Number of colonies in October (interquartile range)	Mean winter loss % (95% CI)
Austria	224	4,920	12 (6-28)	14.7 (11.2-18.3)
Belgium	210	2,282	8 (5-14)	26.0 (19.2-32.7)
Bosnia & Herzegovena	268	15,286	50 (22-78)	8.6 (6.9-10.3)
Croatia	907	90,388	80 (50-120)	7.4 (6.5-8.3)
Denmark	618	11,433	8 (4-16)	15.1 (11.5-18.7)
England & Wales	564	14,580	4 (2-10)	17.5 (9.3-25.6)
Finland	40	4,069	45 (13-118)	19.6 (7.5-31.6)
FYROM	118	6,642	41 (29-72)	6.8 (4.9-8.6)
Germany	4,032	55,560	9 (5-15)	18.3 (17.1-19.4)
Ireland	381	3,527	4 (2-10)	22.4 (17.0-27.8)
Italy	113	3,560	16 (8-30)	29.8 (12.7-47.0)
Netherlands	1,315	11,107	5 (3-8)	29.3 (22.8-35.7)
Northern Ireland	99	435	2 (1-7)	14.1 (8.9-19.4)
Norway	146	5,817	17 (9-38)	8.8 (6.5-11.1)
Poland	281	12,145	30 (15-56)	15.3 (12.0-18.7)
Scotland	111	4,233	3 (2-7)	25.5 (0.5-50.4)

Mean winter colony losses per country in 2009-2010 (van der Zee *et al.,* 2012)

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Colony losses in USA

Year	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
Losses in %	32	36	29	34	30

frequently mentioned reasons:

- *Varroa* & other diseases
- Starvation
- Weak colonies in the fall
- Poor wintering conditions

➢ need for further research and enforced advisory service

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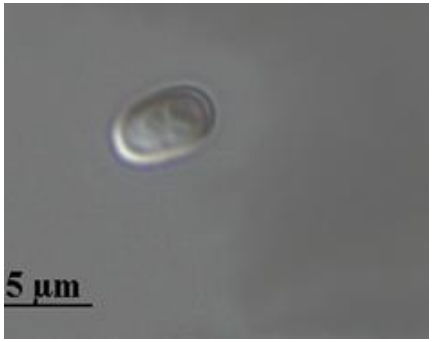
Ranking of most important diseases?

- Varroa
- Viruses
- Foulbrood
- Nosema
- …..



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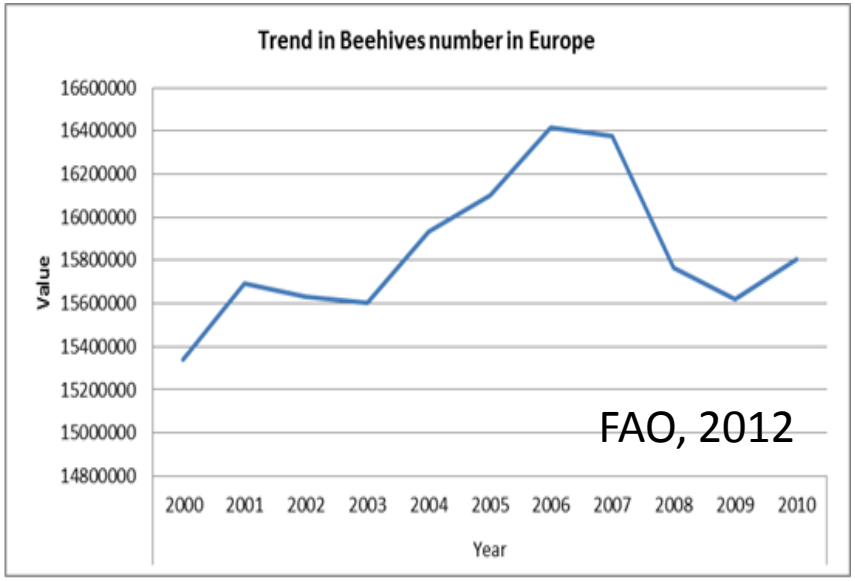
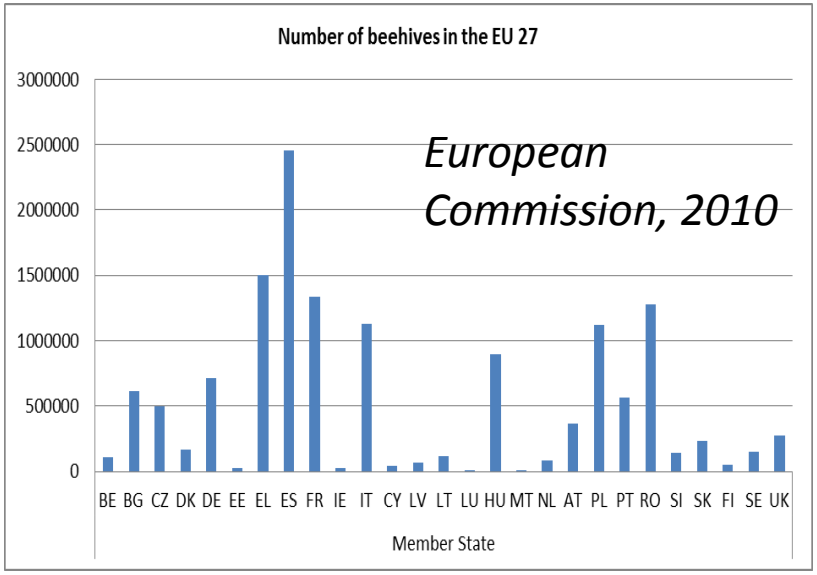
Decline of honey bee colonies?





~ 15 to 16 million colonies in Europe (FAO, 2012)

In most countries- no decline is detectable on the basis of colonies kept (Potts et al, 2010). Even though in some years, high winter losses occur, bee keepers are able to compensate losses of colonies, which nevertheless requires some additional resources and efforts, making beekeeping activity less profitable.

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Beekeeping equipment, practices and impact on bees'welfare

- Improved bee health
- Gentle and easier handling
- Easier transport
- Improved quality of bee products
- Easier honey harvesting
- Easier counting and treatment of Varroa mites

- ➢ Promote the investigation, communication and training of good beekeeping practices
- ➢ programs co-financed by the EU to support the apiculture sector should be continued.

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Diseases - Conclusions

- **Continue research** on pathogens, diseases, pests and veterinary products and consider creating a fund to support the development of such treatments.
- Promote **faster** mutual recognition of authorisations of bee medicines by a simple process of notification,
- make **immediately** available efficient treatments against the *Varroa* mite and other diseases
- **More research** is needed to improve understanding on the true distribution and impact of various viruses that affect bee health.
- **measures** need to be taken **to control** or **prevent** introduction of Non-native **invasive species**, in Europe, like Small Hive Beetle, *Tropilaelaps* sp. and the Asian Hornet.

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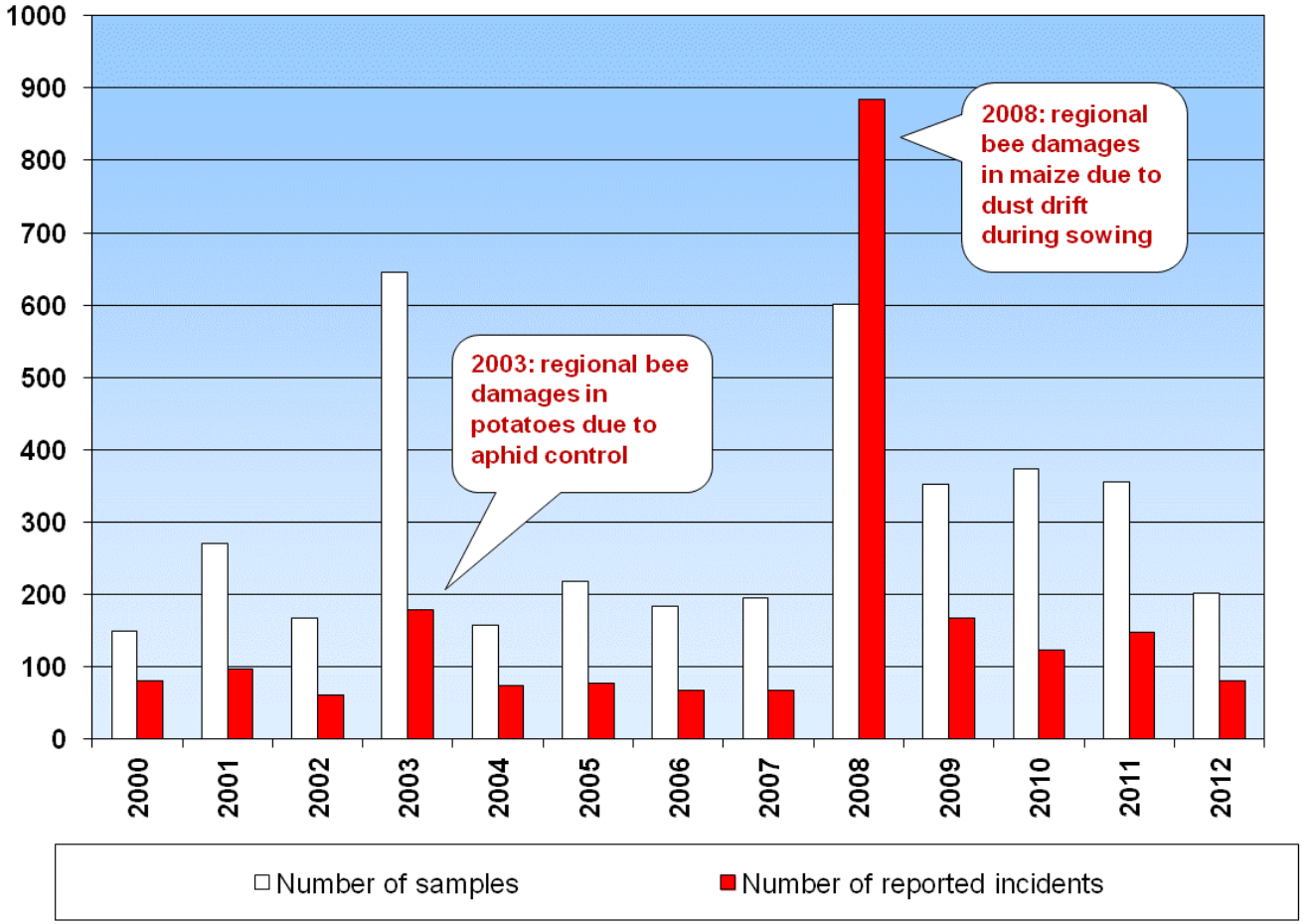
Poisoning incidents- example Germany



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Pesticides

Frequent causes of bee poisoning incidents with pesticides:

- Misuse and Abuse of products
- Ignorance of product label by the farmer
- Poor communication with beekeepers
- Disregard of good practices

*Pesticides do **not** appear to play **a key causative role** to bee **colony losses**; nevertheless frequently some pesticide poisoning incidents are reported every year*

➢ Continue to develop risk mitigation methods for the safe use of pesticides and education of pesticide users to understand the approved conditions of use.

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Pesticides and Risk assessment Initiatives and Activities

- European Food Safety Authority (EFSA)
- European and Mediterranean Plant Protection Organization (EPPO)
- International Commission on Plant Pollinator Relationship (ICPPR)
- US-Environmental Protection Agency
- Organization for Economic Co-operation and Development (OECD)- OECD PEIP

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Conclusions- Pesticides

- **Continue research on pesticides**, **e.g. interactions** of pesticides **with other factors** like pathogens, diseases, pests and veterinary products
- Continue to **develop risk mitigation methods** for the safe use of pesticides and include them in the conditions of use for the products.
- **Education of pesticide users** to understand the approved conditions of use and implement any mitigation measure necessary for the protection of bees.
- Promote the exchange of expertise in risk mitigation of pesticides between countries for example through the OECD PEIP portal.
- Continue to **develop harmonized monitoring tools** to clarify the impact of pesticides and other threats on honey bee health.

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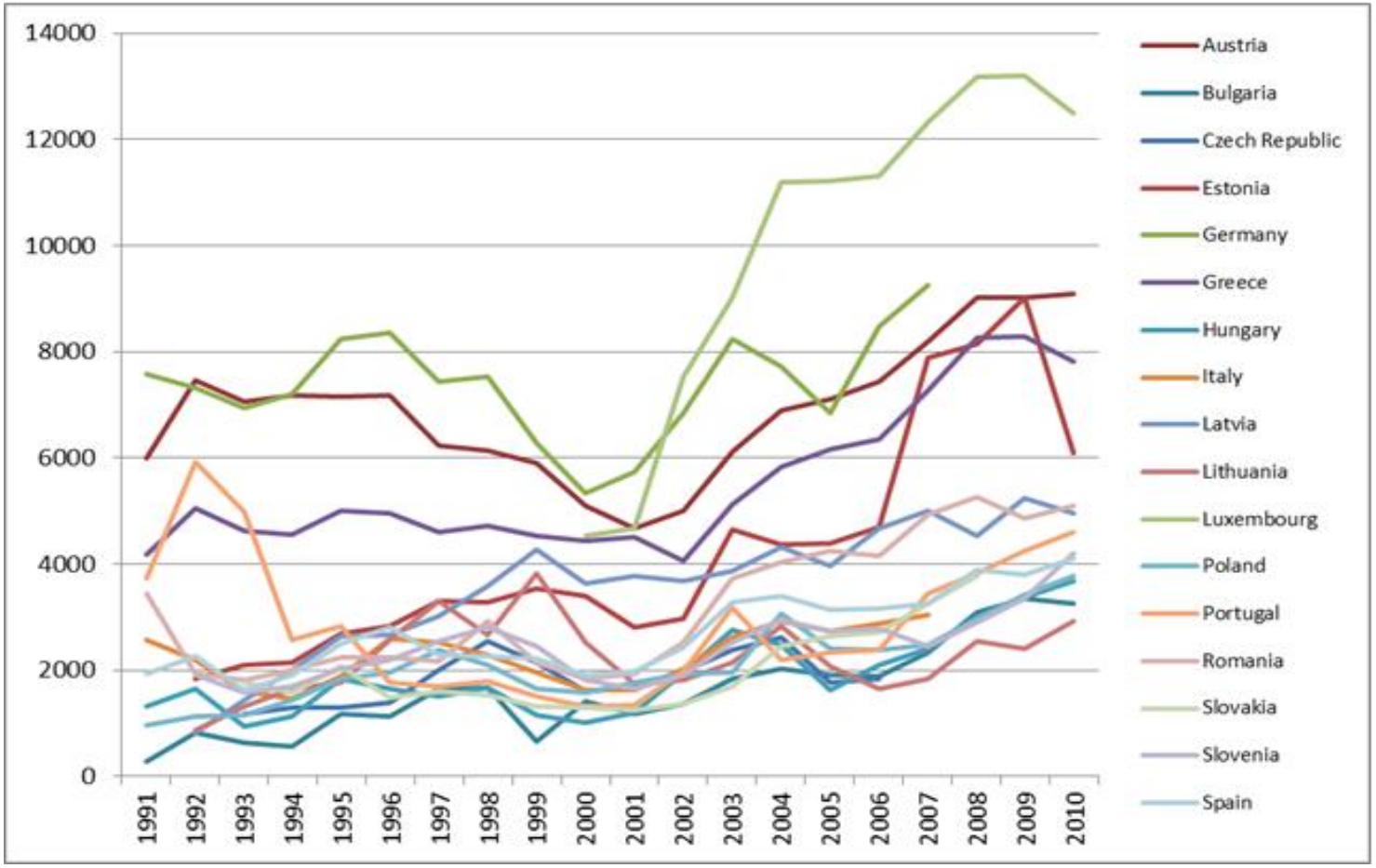
Honey: production, prices and trade



Price of honey in EU countries in Euro/tonne (FAOSTAT, 2012)

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Cost structures and challenges for beekeepers

Fixed costs in beekeeping

- Materials
- Transport
- Buildings
- Tax
- Insurance
- Depreciation

Variable costs

- Varroosis
- Feeding the bees
- Transhumance
- Conditioning

➢ **Ensure framework for profitable beekeeping**

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Foraging habitat loss

- some agricultural land use practises can favour bees, flower rich meadows, orchards, hedges, flowering crops, field margins and buffer strips can all provide valuable food sources and habitats for bees e.g. the pro-actively sown pollinator strip
- **Efforts to improve pollinator and plant biodiversity, promotion and preservation of suitable habitats** to ensure availability of flowers providing nectar and pollen throughout the season seem of **high importance**.

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Foraging habitat loss

- In Europe, policies, regulations and market conditions play a significant role in determining agricultural activities.
- **ensure beekeeping and farming both to be successful and compatible**
- Further measures to provide incentives to farmers to set up flowering areas may provide an essential improvement of bee health and diversity.
- promote landscape management practices that are proven to be effective to promote bee health. This will also support the EU policies to preserve biodiversity in the agricultural landscape. This may be achieved through **grower targeted subsidies**.

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Thanks for your attention and support!

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