

The Swedish model Pesticide Risk Reduction

Peter Bergkvist
Swedish Chemicals Agency

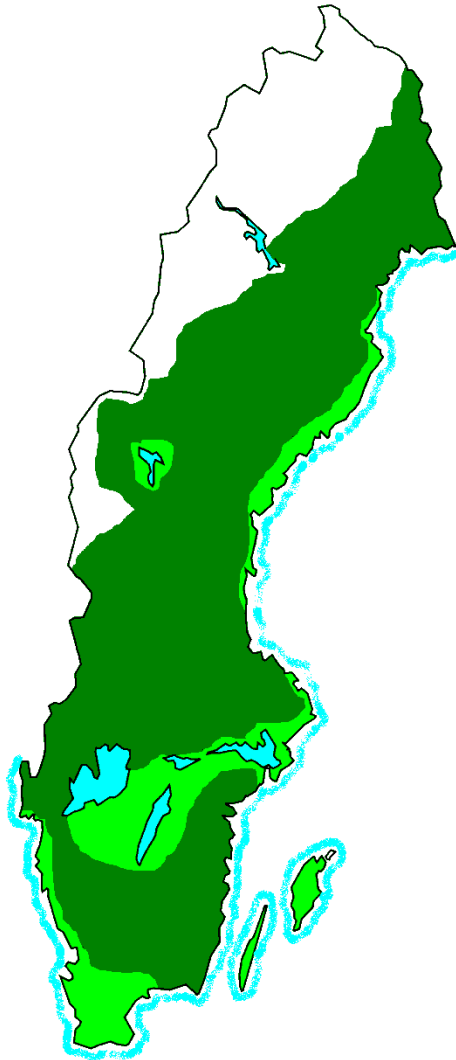


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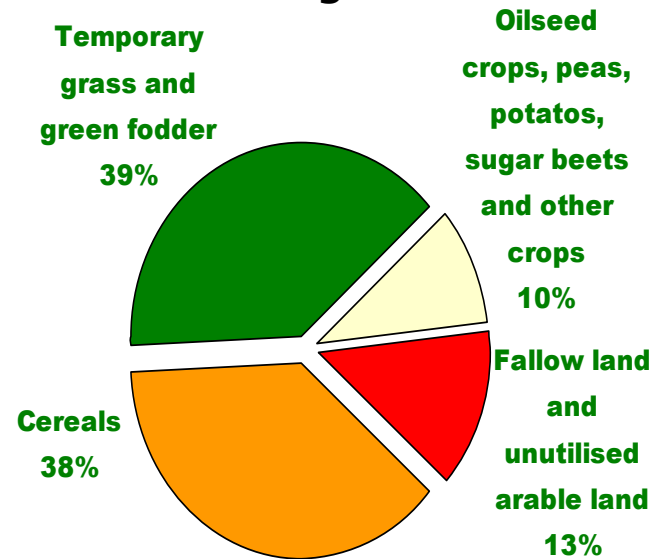
KEMI

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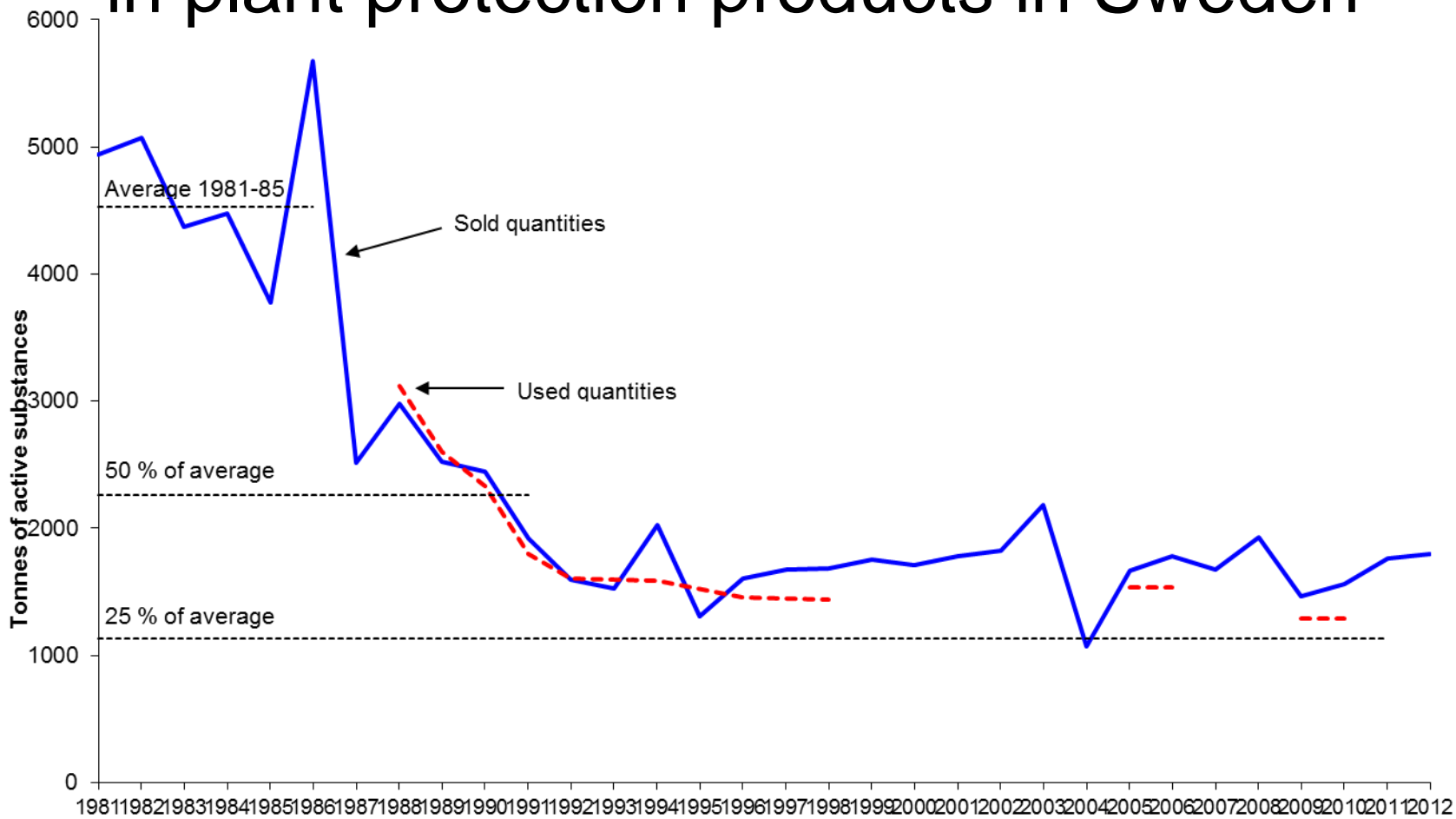
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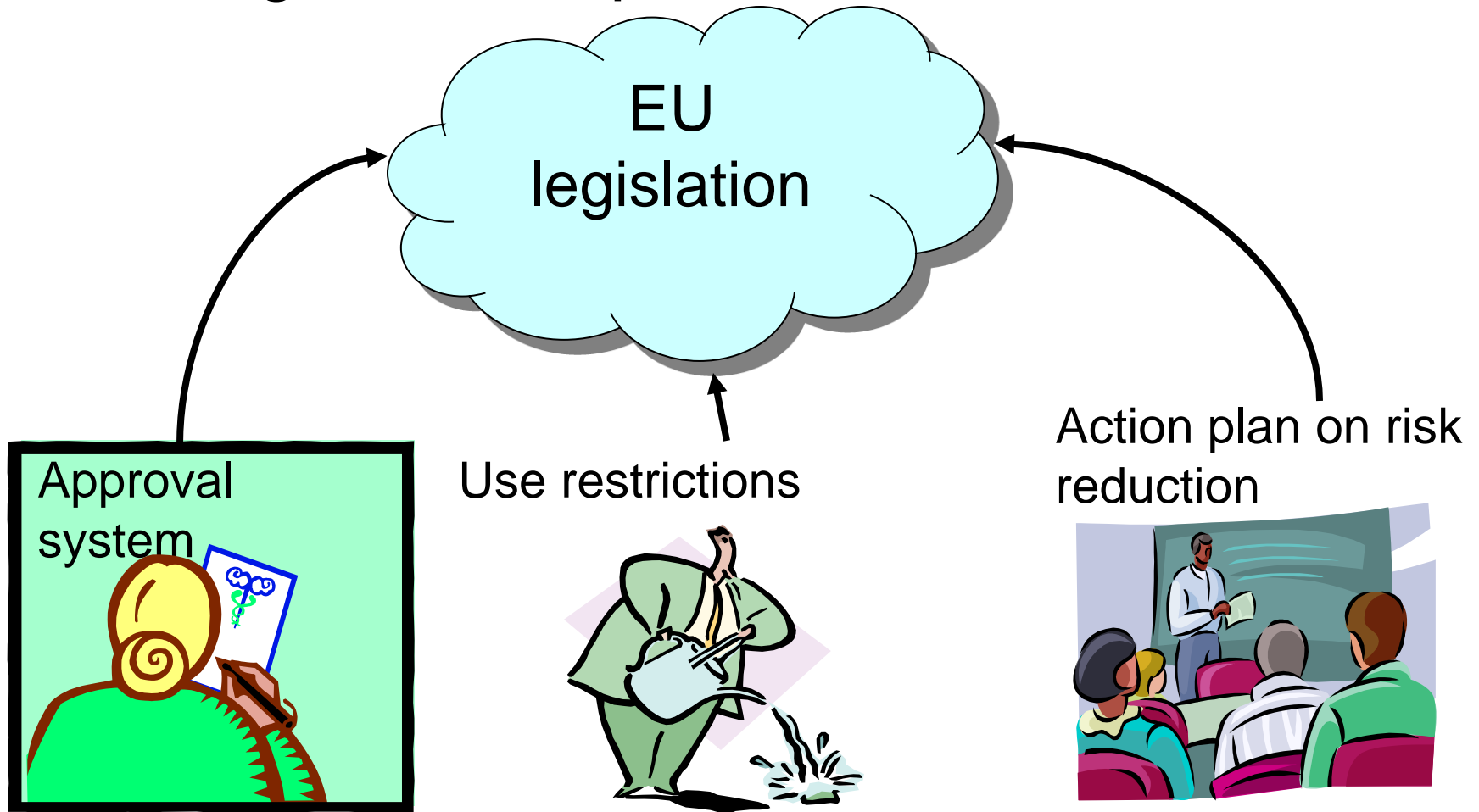
- 450 000 km²
- 7 600 km long coast
- 95 000 lakes > 0.01 km²
- > 150 000 km rivers and water courses
- 65 % forest
- 7 % arable land or about 2.7 million hectare
- 75 000 agricultural holdings



Sold and used quantities of active substances in plant protection products in Sweden



Regulation of pesticides in Sweden



National Action Plan

A joint work between:

- **SBA - Swedish Board of Agriculture**
- **SEPA - Swedish Environmental Protection Agency**
- **KEMI - Swedish Chemicals Agency**

In collaboration with:

- **NFA - National Food Administration**
- **SWEA - Swedish Work Environment Authority**
- **SFA - Swedish Forest Agency**
- **Farmer organisation and industry**

Instruments and activities in the National Action Plan

- Approval provisions, substitution etc (KEMI)
- General use regulations (SEPA)
- Mandatory training of farmers (SBA)
- Advisory service (SBA)
- Research and development (SBA)
- Voluntary testing of spraying equipment (SBA)
- Monitoring of residues in food and water (NFA)
- Environmental levies (Government)
- Worker protection regulations (SWEA)
- Farmer driven information campaign (joint work)

EPA Regulation on the Use of Pesticides

- Requirement to calculate and observe buffer zones
- Equipment requirement
- Compulsory book-keeping of pesticide use
- Requirement of notification and information to local authorities
- General ban on the use in certain areas without a permission



The substitution principle

- The substitution principle is one of the basic principles of Swedish chemicals control.
- National experiences mainly from the beginning of the 90-ties.
- Important tool in National Action Plans to reduce risks with plant protection products.
- Since 2011 also included as a provision in the EC legislation on plant protection products.

Substitution criteria

Substitution is only possible if

- an existing product or non-chemical method is significantly safer for human/animal health or the environment; **and**
- It presents no significant economic or practical disadvantages; **and**
- the chemical diversity are adequate to minimize the occurrence of resistance.

Substitution example

A chemical versus a non-chemical method

Examples:

Chemical methods	Non-chemical control and prevention methods
Post harvest disease control on fruit and ware table potatoes	Climatic control of storage diseases. ULO (Ultra Low Oxygen) and low temperature in warehouses.
Soil disinfection	Preventive methods such as crop rotation, use of resistant crop varieties and to avoid cultivation of susceptible crops in infected areas.
Aquatic weed control	Mechanical weed control and dredging in ditches and watercourses.

Critical uses/activities in focus:

- Filling and cleaning of sprayers
- Use in vulnerable areas
- Early and late season use of herbicides
- Use of herbicides in row sown crops on pervious soils
- Repeated applications with fungicides
- Use of fan sprayers in orchard
- Spraying in greenhouses and the following handling of treated plants

Government certification programme of users

- Training required for all professional users of pesticides
- 4 day long course.
- Content:
 - General aspects (legislation etc.)
 - Pesticide risks (environment, operators, food etc)
 - Practical work (plant protection issues)
 - Exercise (mixing and filling of a sprayer)
 - Examination
- The certificate is valid for 5 yrs. 1 day renewal.



KEMI

Plant Protection Centers



Tasks:

- Early warning of pests and diseases
- In field advisory service
- Web information
- Biological trials

www.sjv.se/vsc

Säkert
växtskydd

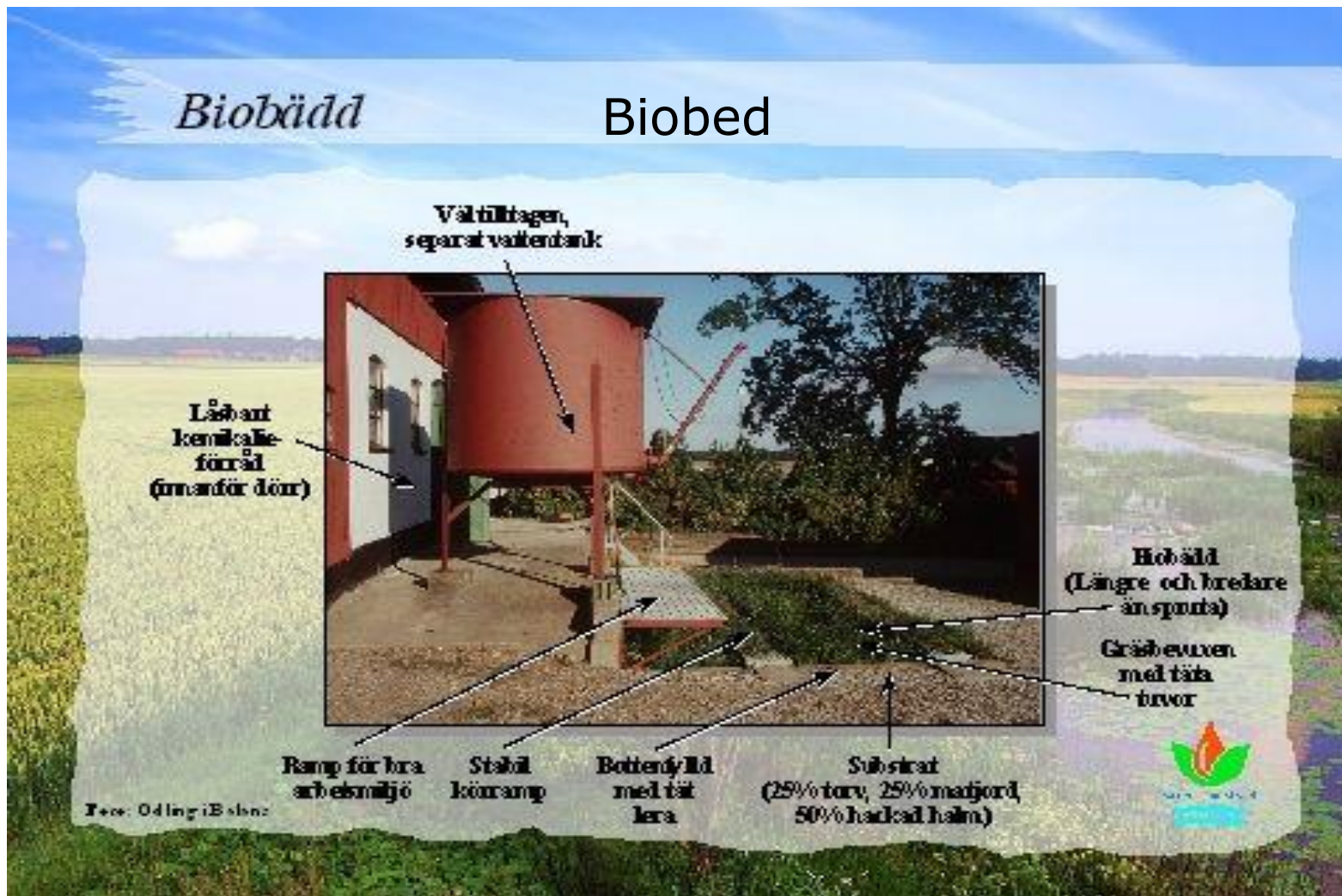


”Focus on
Pesticides”

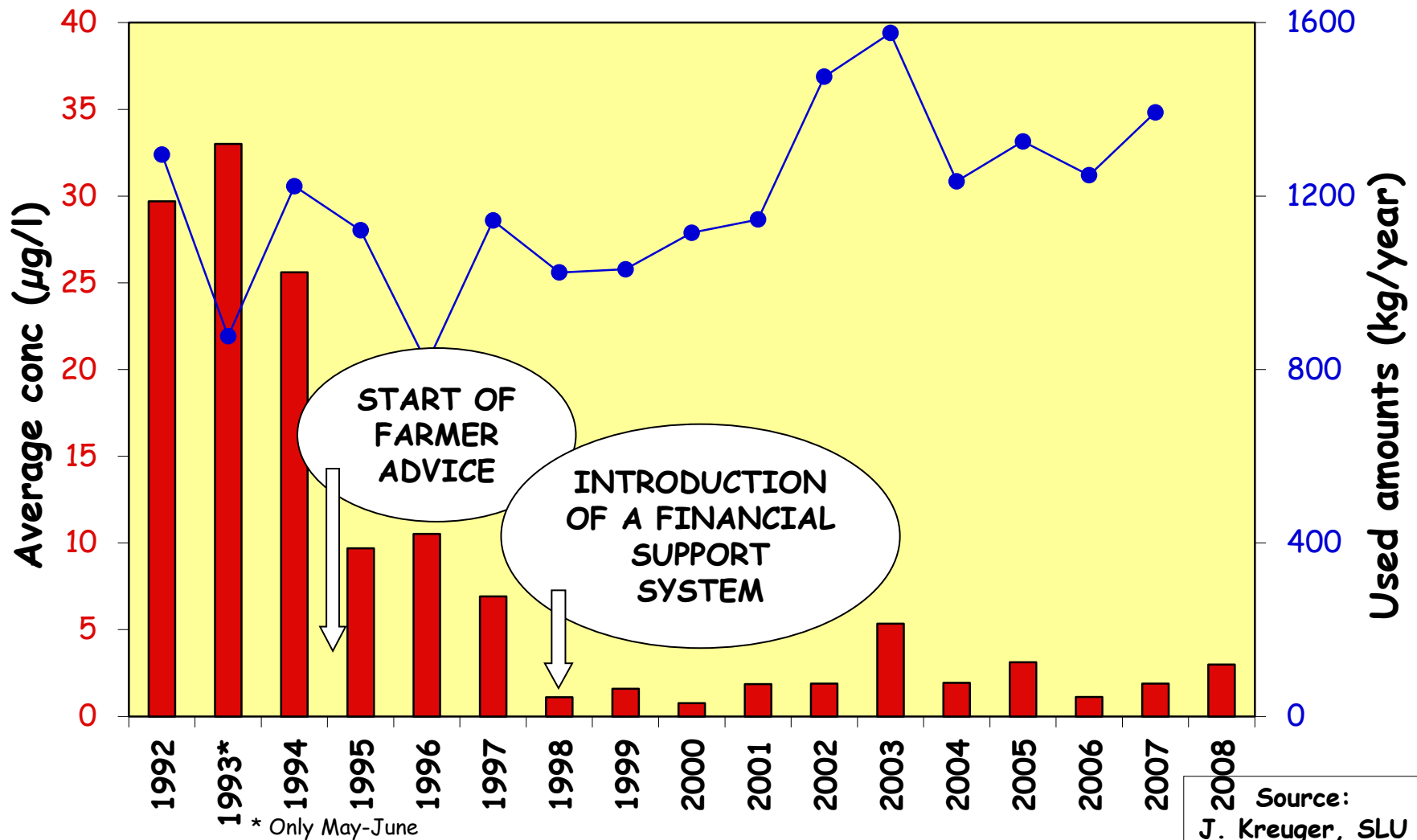
- A joint information campaign between authorities, the farmers association, retailers and industry.
- Raise awareness of pesticide risks among farmers.
- Main focus on reducing point source pollution.
- A “Helper” to calculate proper buffer zones related to wind drift.
- Promote filling and cleaning of spraying equipment on biological active grounds such as on a “biobed”.
- Videos on Youtube with practical advice to farmers.

Biobädd

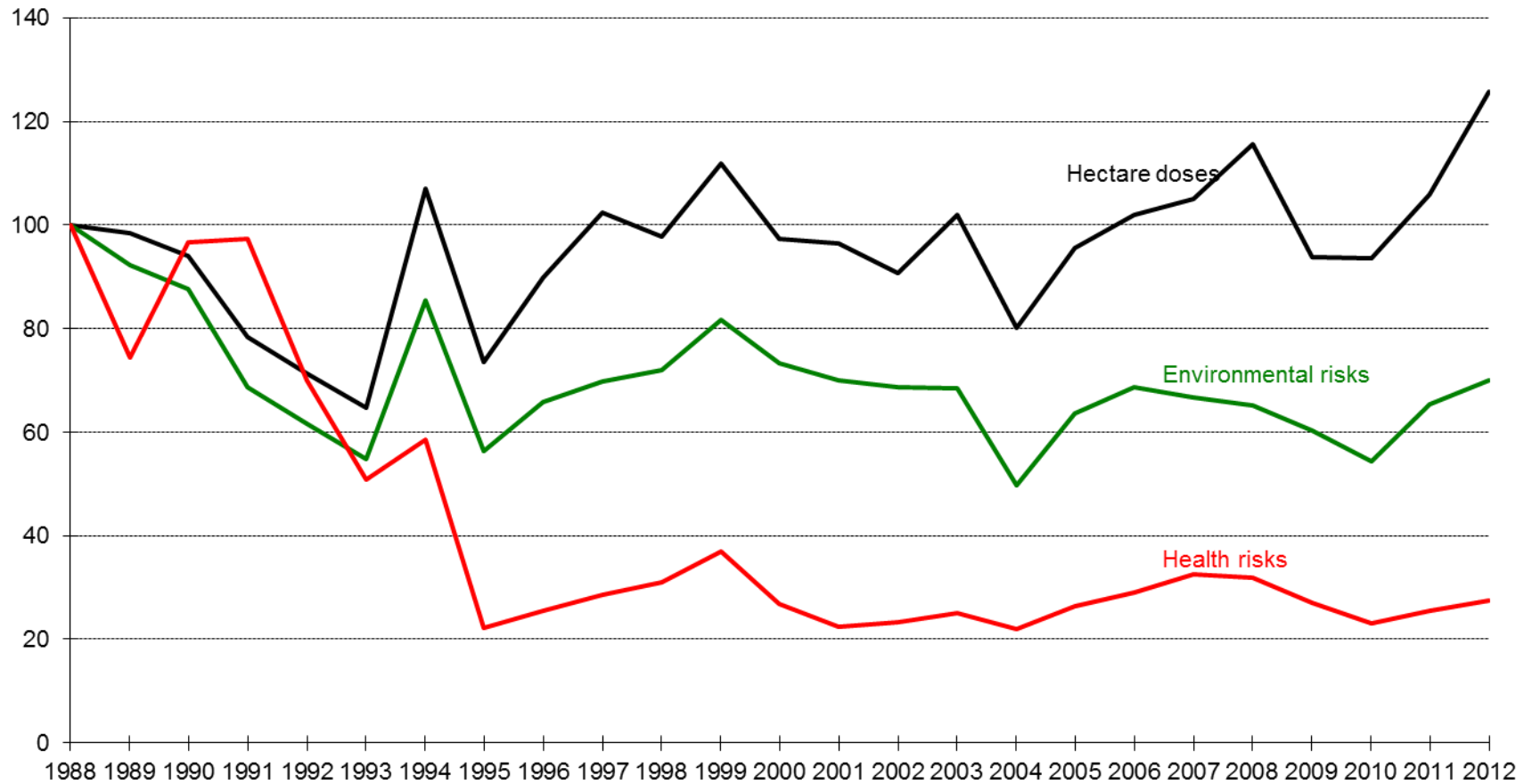
Biobed



Average conc. of pesticide residues in the river of Vemmenhög May-Sept 1992-2008



Pesticide Risk Indicators



Conclusions

What has contributed to the success?

- Balance between mandatory and voluntary elements
- Activities performed at different levels and driven by different stakeholders
- Full support of the programme from the Association of Swedish Farmers
- A joint work between the environmental and agricultural authorities