TOOLS
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Landscape approach for IPM

Theoretical

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WHAT IS…	The landscape approach is the consideration of the effects of some elements of the landscape on the success of Integrated Pest Management, as they can influence **conservation biological control**, the **spatial and temporal distribution** of animal pests and natural enemies, and the **biodiversity** that contributes to the long term stability and sustainability of agroecosystems These effects are due to **conservation biological control** (the spontaneous colonisation of fields by natural enemies), to the **pattern** of habitats (which influences distribution of both pests and natural enemies), and to the **biodiversity** (long term stability and sustainability). These large scale effects are dependant on the amount and the composition of species in non-cultivated areas and on the farming system intensity at regional level. **Non-cultivated areas** provide alternative habitats for both pests and natural enemies; however these are the main sources for biodiversity. **Farming system intensity** influences the amount of suitable habitats for pests, weeds, diseases and natural enemies based on the crop rotation and pest management intensity. Agronomic practices in the given region determine the amount of pests and natural enemies in the landscape, for example if maize is not usually rotated, the risk of western corn rootworm is larger; or if in practice no insecticide is sprayed in arable corps, the amount of natural enemies is larger in the landscape.
WHY	If farmers are aware of landscape effects in their own region, it helps to understand the effects coming from 'outside' their fields and to include them into their decisions. It enhances **common responsibility** for the presence of both pests and natural enemies in their region, and also for the level of biodiversity. This might enhance the implementation of EU policy to emphasise other functions of agriculture rather than the focus on production.
HOW	The landscape approach should be implemented as an element of IPM. After introducing the expected landscape effects in general, the adviser should refer to landscape relevancies by discussing the given IPM topic. Often there is no clear evidence for landscape effects, so the experience of the participants should be enhanced. In cases where they don't have any, the adviser should fire their interest and provide a tool-box to measure it. Some methods to help farmers to understand landscape and landscape approach: ► Identification of landscape elements in the farmers' region that can influence the biological control of specific animal pests ► Agroecosystem analyses of fields for different habitat patterns ► Agroecosystem analyses of field margins for different habitat patterns ► Development of participatory plans on landscape expansion.

SOURCES	**ENDURE website** ► Landscape ecology: the bigger picture: ► ENDURE Deliverables DR2.9 ► ENDURE Deliverable 2.2 **IOBC** ► Landscape management for functional biodiversity **ENDURE Information Centre (www.endureinformationcentre.eu)** ► Keywords: Measure > habitat conditions *or* protection and enhancement of important beneficial organisms ► IOBC/WPRS Bulletin Vol. 26 (4), 2003, Vol. 29 (6) 2006, Vol. 34, 2008, 2010 (in press) ► Boller, E. F., Häni, F., Poehling, H-M (2004): Ecological infrastructures: ideabook on functional biodiversity at the farm level