Objectives of the session

- General overview of impact assessment
- To demonstrate some examples using different methods
- To identify good practice and expertise in the network
- To identify common issues and ways to improve impact assessment practice
Structure of the technical session

- General introduction – Frank van Holst
  - Terminology / types of impact assessment
  - Formal requirements (EU / national frameworks)
  - Some examples across Europe
    - Ex ante on project level NL
    - Ex post on program level DE / FL
- Ex ante evaluation in Lithuania – Vilma Daugaliene
- Project level experiences including ex ante evaluation in Portugal – Margarida Ambar
- Program level experiences with ex post evaluation in Galicia / Spain – David Miranda
- Interactive session to identify good practice and common issues

What is Impact Assessment

- a decision support instrument
- assesses the effects, both positive and negative
- taking into account economic, social and environmental factors
- as a result
  - the effects can be weighed against the objectives
  - alternatives can be compared
  - effect of policy measures can be assessed
Terms / types

- Impact Assessment (IA)
- Ex ante evaluation / ex post evaluation
- Programme level <-> project level
- Environmental Impact Assessment (EIA)
- Economic: Cost benefit analysis
- Social impacts
- Quantitatively / qualitatively

Hierarchy of objectives

<table>
<thead>
<tr>
<th>Input</th>
<th>Modernisation of agricultural holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>Number of supported investments on farms</td>
</tr>
<tr>
<td></td>
<td>Financial value of investments</td>
</tr>
<tr>
<td>Result</td>
<td>Number of farms with improved technology</td>
</tr>
<tr>
<td></td>
<td>Increased productivity</td>
</tr>
<tr>
<td>Impact</td>
<td>Economic Growth</td>
</tr>
<tr>
<td></td>
<td>Increased income per worker</td>
</tr>
</tbody>
</table>

Needs

- Overall Objectives: Improve income groups, increased competitiveness
- Specific Objectives: Adaptation of technology to enhance labour productivity
- Operational Objectives: Modernisation and improvement of technical equipment available to farmers
Hierarchy of objectives

Impact of Land Consolidation

For example....

- **Input**  Expertise / finance
- **Output** Consolidation of plots, increase of scale, better drainage, better irrigation
- **Result**  Less costs / higher production
- **Impact**  Higher income / better living conditions
- **Overall impact**  Viable rural areas
EU CONTEXT

- Environmental impact assessment of project interventions: EIA
- Strategic Environmental Assessment of programmes / plans: SEA
- Common Monitoring and Evaluation Framework under the rural development programme: CMEF

EIA: EU legislation

- Directive 85/337: on the assessment of the effects of certain public and private projects on the environment; and
- Directive 97/11, which amends certain aspects of the above Directive.
- Directive 2003/35/EC Amending the above directive on public participation
EIA: Article 3 of Directive 85/337:

- An EIA should identify, describe and assess, the direct and indirect effects on:
  - human beings, fauna and flora;
  - soil, water, air, climate and landscape;
  - material assets and cultural heritage; and
  - the interaction between the above.

EIA: Annex I and II projects

- Art. 4 of 85/337 specifies in which case an EIA is mandatory (“ANNEX I”) and in which case the member state decides whether an EIA is required (“ANNEX II”)

  Certain rural development and agricultural investment projects are within ANNEX I and II both

  Projects mentioned in ANNEX II: the member state may decide either by case to case examination or by specifying criteria or threshold values, or by a combination of both
EIA: Annex II projects <> LC

Agriculture
(a) Projects for the restructuring of rural land holdings.
(b) Projects for the use of uncultivated land or semi-natural areas for intensive agricultural purposes.
(c) Water-management projects for agriculture.
(d) Initial afforestation where this may lead to adverse ecological changes and land reclamation for the purposes of conversion to another type of land use.
(e) Poultry-rearing installations.
(f) Pig-rearing installations.
(g) Salmon breeding.
(h) Reclamation of land from the sea.

EIA: Dutch criteria Annex II

Impact assessment for land development is needed in plans which include:
- Land use change > 250 hectares
- Change of drainage level > 6 cm
- Possible impact on Natura 2000 areas
- Deposition of > 500,000 polluted soil
- Creating conditions for intensive animal breeding
- Change of dike alignment
Steps of EIA

1. Screening: identifying the need for a formal EIA
2. Determining the scope
3. Describing and quantifying effects
4. Comparing effects with objectives
5. Comparing alternatives
   - Measures to prevent, mitigate or compensate adverse effects
   - Public consultation
6. Decision on alternative to be implemented
7. Monitoring

EU Context: SEA legislation

Strategic Environmental Assessment

- Directive 2001/42/EC

CMEF: LC related guidelines

<table>
<thead>
<tr>
<th>Measure Code</th>
<th>Objective related baselines</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>Improvement of the infrastructure related to the development of the agricultural and forestry sector, contributes to the competitiveness of farming and forestry. Support may cover:</td>
</tr>
<tr>
<td></td>
<td>- access to farm and forest land</td>
</tr>
<tr>
<td></td>
<td>- land consolidation</td>
</tr>
<tr>
<td></td>
<td>- energy supply</td>
</tr>
<tr>
<td></td>
<td>- water management (improvement of irrigation networks, drainage, …)</td>
</tr>
<tr>
<td>Target group</td>
<td>not specified</td>
</tr>
<tr>
<td>Target area</td>
<td>Not specified</td>
</tr>
<tr>
<td>Common indicators</td>
<td>baseline</td>
</tr>
<tr>
<td></td>
<td>- Economic development of primary sector</td>
</tr>
<tr>
<td></td>
<td>- Amount of public expenditure realised (total versus EAFRD)</td>
</tr>
<tr>
<td></td>
<td>- Number of operations supported (division according to the type of land and to the type of operation)</td>
</tr>
<tr>
<td></td>
<td>- Total volume of investment (divisions according to the type of land and to the type of operation)</td>
</tr>
<tr>
<td></td>
<td>- Increase in gross value added (support for holdings, divisions according to type of sector)</td>
</tr>
<tr>
<td></td>
<td>- Economic growth</td>
</tr>
<tr>
<td></td>
<td>- Labour productivity</td>
</tr>
</tbody>
</table>
Evaluation questions CMEF

Measure code 125

• To what extent has the scheme contributed to restructuring and developing physical potential through the improvement of infrastructures?
• To what extent has the scheme promoted the competitiveness of agricultural and forestry holdings through the improvement of infrastructures?

Ex Ante Impact assessment: Applying CBA in NL

• Till 2000 for every Land Development project a CBA for the 'agricultural' measures was elaborated:
• Parcellation, rural roads, rural water management
• Agricultural plan measures were considered / optimised / adapted / skipped by means of CBA:
• Strict minimum % of Internal Rate of Return (IRR) was maintained
• A.o. Central land Development Committee (CLDC; was National Steering) was alert on this and ranking projects based on the outcome
Calculation system

- Representative project farm models
- General research results
- Changes in the reallocation/water management/accessing
- Present situation; autonomous situation; plan 1 plan 2.
- Benefits
  - Cultivation
  - Productivity
- Costs of the relevant measures
- Internal rate of return.

Farm models

- Representative models per sector
  Dairy, arable, horticulture, fruits, trees, forestry
- Changes in farm system as a result of land consolidation
- Cultivation activities with task times
- Changing in farm management
- Changing in cropping plan, soil quality
From 2000 CBA not applied

- WHY:
  - 1. Decentralisation of the steering of Land Development from Ministry and CLDC to 12 Provinces
  - Provincial governments do not find it important
  - Decisions on projects in more ‘political’ way.
  
  - 2. Agricultural component in integrated LD projects smaller / less important;
  - Pure agricultural projects occur less and less

Integrated Development Plan

- Nature
- Farm access roads
- Recreation
- Land consolidation
Krimpenerwaard integrated development project
Example: Integrated rural development project

- First result:
- Development plan and EIA:
  - Describing effects of:
    - current situation,
    - the likely evolution without implementation
    - 2 alternatives
- Effect on agriculture, nature, culture heritage,
- Public consultation ---> Report

Remaining agricultural land
Remaining agricultural land with improved dewatering
Remaining agricultural land with nature conservation (birds)
Nature reserves and nature development

Nature reserves and nature development
Voor kavelruil

DLG         Project
Krimpenerwaard

Na kavelruil

DLG         Project
Krimpenerwaard
Impact land consolidation

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>A.D.</th>
<th>plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>% farmers with &gt; 60% house plots</td>
<td>42%</td>
<td>44%</td>
<td>99%</td>
</tr>
<tr>
<td>% farmers with &gt; 80% house plots</td>
<td>24%</td>
<td>10%</td>
<td>61%</td>
</tr>
<tr>
<td>amount of plots / farm</td>
<td>3.7</td>
<td>4.6</td>
<td>1.8</td>
</tr>
<tr>
<td>area with dewatering &gt; 60 cm</td>
<td>22%</td>
<td>22%</td>
<td>40%</td>
</tr>
<tr>
<td>Cost benefit analysis:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>internal rate of return</td>
<td></td>
<td></td>
<td>6%</td>
</tr>
</tbody>
</table>

Resume of Dutch trends

Ex ante
- Less attention for agricultural CBA; expertise is scarce
- More attention for broader CBA
- Environmental Impact Assessment more focused on policies than on projects

Ex post
- General weak, limited to some incidental cases
- Negative image of land consolidation: expensive / long duration
Choice of the projects: some figures

<table>
<thead>
<tr>
<th>Projects</th>
<th>Road</th>
<th>Rail</th>
<th>Flood prev.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Werl B1</td>
<td>Würsele-Euchen</td>
<td>Bislicher Insel</td>
</tr>
<tr>
<td>Responsible LC authority</td>
<td>Soest</td>
<td>Lövenich</td>
<td>Königswinter-Nord-ICE</td>
</tr>
<tr>
<td>Main targets: Allocation of area for</td>
<td>Country road</td>
<td>Ring road</td>
<td>Country road</td>
</tr>
<tr>
<td>Length of the line (in the LC area)</td>
<td>3,0 km</td>
<td>3,8 km</td>
<td>4,2 km</td>
</tr>
<tr>
<td>Costs of the project (without land acquisition)</td>
<td>9,5 Mio. €</td>
<td>2,0 Mio. €</td>
<td>2,1 Mio. €</td>
</tr>
<tr>
<td>LC area</td>
<td>121 ha</td>
<td>490 ha</td>
<td>469 ha</td>
</tr>
<tr>
<td>Concerned land owners</td>
<td>55</td>
<td>416</td>
<td>237</td>
</tr>
<tr>
<td>Concerned parcels</td>
<td>162</td>
<td>619</td>
<td>279</td>
</tr>
</tbody>
</table>
Steps of the analysis of the value added

1. Managerial analysis:
   - Results of the “cost-benefit-analysis”
   - Estimations

2. Impact analysis
   - Costumer satisfaction (interview of the parties concerned and of external experts)

3. Economic analysis
   - Impact-orientated consideration
     - Tangible impacts (countable)
     - Intangible impacts (uncountable)

Managerial analysis

Total costs of a land consolidation procedure

Costs of the procedure
- Personnel or other costs of the government, e.g.
  - costs of the local agencies
  - costs of the ULCA
  - costs of the ministry
  - costs of others

  to be paid by
  State NRW / developer

Costs of the implementation
- Costs of common facilities
  - roads, ways, water bodies, landscape measures
- Other implementation costs
  - costs of surveying and valuation of the parcels

  to be paid by
  developer
Managerial analysis

| Costs of photogrammetry | 120,000 € | 347,000 € | 58,787 € | 1,035,000 € |
| Costs of external placing | 55,029 € | 114,755 € | 88,180 € | 265,367 € |
| Total costs of photogrammetry | 0 € | 13,564 € | 12,167 € | 0 € |
| Costs of common facilities | 13,707 € | 12,905 € | 3,478 € | 9,691 € |
| Total costs of the procedure of the local LC authority | 522,850 € | 1,468,366 € | 528,937 € | 1,955,243 € |
| Allocation of costs of ULCA | 26,927 € | 75,621 € | 27,137 € | 100,695 € |
| Allocation of costs of DistrGov | 5,804 € | 16,299 € | 5,849 € | 23,053 € |
| Allocation of costs of Ministry | 3,451 € | 9,691 € | 3,478 € | 12,905 € |
| Total costs of the procedure | 559,032 € | 1,569,976 € | 563,401 € | 2,090,543 € |
| Costs of common facilities | 0 € | 878,000 € | 0 € | 88,000 € |
| Other costs (e.g. surveying) | 27,618 € | 1,035,000 € | 58,787 € | 347,000 € |
| Total implementation costs | 27,618 € | 1,035,000 € | 58,787 € | 347,000 € |

Efficiency of the procedures

Costs of the procedure referring to one hectare

- simple structure
- low damages of the general use of Land
- small procedure, high fixed costs

<table>
<thead>
<tr>
<th>Costs of the procedure referring to one hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>average</td>
</tr>
<tr>
<td>4,091 €/ha</td>
</tr>
</tbody>
</table>

Total costs: 8,600,000 €
Impact analysis
Concept of a representative customer survey

### Parties Concerned
- **Landowners**: 34%
  - Direct or indirect concerned?
  - Grade of service & consumer satisfaction?
  - Aims of the procedures and impacts?
- **Developer**: 70%
  - Road, rail or flood prev. project?
  - Possibility of participation?
  - Reduction of costs and time?
- **Public agencies**: 97%
  - Municipality, district or others?
  - Evaluation of the procedure?
  - Special impacts?
- **Board of body of participants**: 82%
  - Kind of the project?
  - Status of the procedure?
  - Possibility of participation?
  - Special impacts?

Rate of returned questionnaires

### Economic Analysis
Tangible (Countable) Impacts

#### A - Landowners
- **A-T01**: Improving of the production and working conditions
- **A-T02**: Saving of charges

#### B - Developer
- **B-T01**: Saving of costs for land acquisition
  - Costs for land acquisition
  - Compensations
  - Personnel costs
  - Notarial charges (incl. charges for the land register)
- **B-T02**: Saving of costs for surveying
  - (Incl. cadastral charges)
- **B-T03**: Saving of general costs because of a faster beginning of the project

#### C - Public agencies
- **C-T01**: Saving of costs for the realisation of public agencies projects

#### D - General public
- **D-T01**: Economic benefit because of a faster realisation of the project
- **D-T02**: Improvement of the cadastre
- **D-T03**: Economic benefit because of the advancement of the road and path network
## Economic analysis
### Tangible (countable) impacts

<table>
<thead>
<tr>
<th>Tangible impacts</th>
<th>Road</th>
<th>Rail</th>
<th>Flood prev.</th>
<th>Total benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Werp B1</td>
<td>Würselen-Euchen</td>
<td>Lövenich</td>
<td>KönigsWinter</td>
</tr>
<tr>
<td>Land owners</td>
<td>7,024 €</td>
<td>597,092 €</td>
<td>69,300 €</td>
<td>140,450 €</td>
</tr>
<tr>
<td>A-T01</td>
<td>0 €</td>
<td>573,000 €</td>
<td>50,000 €</td>
<td>95,000 €</td>
</tr>
<tr>
<td>A-T02</td>
<td>7,024 €</td>
<td>24,092 €</td>
<td>19,300 €</td>
<td>45,450 €</td>
</tr>
<tr>
<td>Developer</td>
<td>514,688 €</td>
<td>1,196,655 €</td>
<td>997,307 €</td>
<td>2,265,044 €</td>
</tr>
<tr>
<td>B-T01</td>
<td>200,327 €</td>
<td>937,826 €</td>
<td>468,176 €</td>
<td>845,296 €</td>
</tr>
<tr>
<td>B-T02</td>
<td>268,479 €</td>
<td>187,170 €</td>
<td>408,959 €</td>
<td>487,803 €</td>
</tr>
<tr>
<td>B-T03</td>
<td>45,882 €</td>
<td>71,659 €</td>
<td>120,172 €</td>
<td>931,905 €</td>
</tr>
<tr>
<td>Public agencies</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>362,080 €</td>
</tr>
<tr>
<td>General public</td>
<td>1,010,113 €</td>
<td>1,362,339 €</td>
<td>482,199 €</td>
<td>1,523,355 €</td>
</tr>
<tr>
<td>D-T01</td>
<td>934,599 €</td>
<td>196,758 €</td>
<td>207,204 €</td>
<td>1,221,963 €</td>
</tr>
<tr>
<td>D-T02</td>
<td>75,514 €</td>
<td>267,581 €</td>
<td>274,995 €</td>
<td>301,392 €</td>
</tr>
<tr>
<td>D-T03</td>
<td>---</td>
<td>878,000 €</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Total benefit (projects)</td>
<td>1,531,825 €</td>
<td>3,156,086 €</td>
<td>1,910,886 €</td>
<td>3,928,809 €</td>
</tr>
</tbody>
</table>

## Economic analysis
### Intangible (incountable) impacts

<table>
<thead>
<tr>
<th>A Landowners</th>
<th>B Developer</th>
<th>C Public agencies</th>
<th>D General public</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-I01</td>
<td>B-I01</td>
<td>C-I01</td>
<td>D-I01</td>
</tr>
<tr>
<td>Prevention of loss of land</td>
<td>Decrease of internal expenditure at the plan approval, at the transfer of possession and the compulsory purchase procedure</td>
<td>Increase of the realisation possibility of third party projects (e.g. nature prot.)</td>
<td>Increase of the general acceptance of the project</td>
</tr>
<tr>
<td>A-I02</td>
<td>B-I02</td>
<td>C-I02</td>
<td>D-I02</td>
</tr>
<tr>
<td>Elimination of cultivation handicaps caused by the project</td>
<td>Savings of costs caused by lawsuits</td>
<td>Decrease of internal expenditure at the plan approval, at the transfer of possession and the compulsory purchase procedure</td>
<td>Preservation and promotion of nature protection and landscape planning</td>
</tr>
<tr>
<td>A-I03</td>
<td>B-I03</td>
<td>C-I04</td>
<td>D-I03</td>
</tr>
<tr>
<td>Preservation of farms / Prevention of loss of livelihood</td>
<td>Saving of costs caused by lawsuits</td>
<td>Better legal certainty caused by a better cadastre (surveying) / correction of the public records</td>
<td>Promotion of the action fields “recreation” and “tourism”</td>
</tr>
<tr>
<td>A-I04</td>
<td>B-I04</td>
<td>C-I05</td>
<td>D-I04</td>
</tr>
<tr>
<td>Better legal certainty caused by a better cadastre (surveying) / correction of the public records</td>
<td>Saving of costs caused by the loss of livelihood</td>
<td></td>
<td>Improvement of the regional job situation</td>
</tr>
</tbody>
</table>
## Balance Sheet of the Added Value

<table>
<thead>
<tr>
<th>Location</th>
<th>Costs</th>
<th>Tangible Benefit</th>
<th>Intangible Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Werl B1</td>
<td>586,650 €</td>
<td>1,531,825 €</td>
<td></td>
</tr>
<tr>
<td>Würselen-Euchen</td>
<td>2,604,976 €</td>
<td>3,156,086 €</td>
<td></td>
</tr>
<tr>
<td>Lövenich</td>
<td>622,188 €</td>
<td>1,910,886 €</td>
<td></td>
</tr>
<tr>
<td>Königswinter</td>
<td>2,437,543 €</td>
<td>3,928,809 €</td>
<td></td>
</tr>
<tr>
<td>Bislicher Insel</td>
<td>2,340,551 €</td>
<td>2,603,554 €</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,591,908 €</strong></td>
<td><strong>13,131,160 €</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Prevention of loss of land
- Preservation of farms / Preservation of loss of livelihood
- Savings of costs caused by lawsuits
- Increase of the realization possibility of third party projects (e.g. nature prot.)
- Increase of the general acceptance of the project
- Improvement of the nature protection
- Promotion of the action fields “recreation” and “tourism”
- Savings of costs caused by lawsuits
- Preservation of farms / Preservation of loss of livelihood
- Increase of the realization possibility of third party projects (e.g. nature prot.)
- Increase of the general acceptance of the project
- Improvement of the nature protection
- Promotion of the action fields “recreation” and “tourism”

## Flanders: Qualitative ex post evaluation

**Problem and objective**

- Land consolidation is a delicate balancing act
- Critics
- Lack of objective figures

![Map of Flanders](image-url)
RESULTS

Agricultural aspects – direct effects

<table>
<thead>
<tr>
<th></th>
<th>verbetering</th>
<th>eerder een verbetering</th>
<th>gelijk</th>
<th>eerder een verslechtering</th>
<th>verslechtering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had de ruilverkaveling een invloed op de gemiddelde oppervlakte van uw percelen? (%)</td>
<td>59%</td>
<td>9%</td>
<td>32%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>verbetering</th>
<th>eerder een verbetering</th>
<th>gelijk</th>
<th>eerder een verslechtering</th>
<th>verslechtering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had de ruilverkaveling een invloed op de globale vorm van uw percelen? (%)</td>
<td>56%</td>
<td>14%</td>
<td>23%</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>

RESULTS

- 85% considers LC a right
- 3/4 considers LC to be beneficial for their farms

Farmers support:
- integrated projects
- concept of LC
- happy with results

Guarantee of sufficient agricultural benefits is essential for support among farmers for integrated approaches
General directions

- Land consolidation requires systems for impact assessment (EU / National requirements)
- EIA: bigger projects, integrated with infrastructure > screening is often enough
- Reasonable experience with ex ante evaluation: review and update of methods for application in different types of projects is needed
- Little experience with ex post evaluation, not systemised at project level, incidental studies at program level
- Good mix of qualitative and quantitative methods needed to keep it manageable

Questions

- Who knows has interesting examples of impact assessment related to Land Consolidation?
- How can we stimulate jointly the establishment or improvement of impact assessment approaches?
Thank you very much!!