

**Dienst Landelijk Gebied**

**FAO Workshop Prague 2008**

**Introduction to Impact  
Assessment**

**Frank van Holst**

**DLG the Netherlands**



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## **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



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## 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



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## 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



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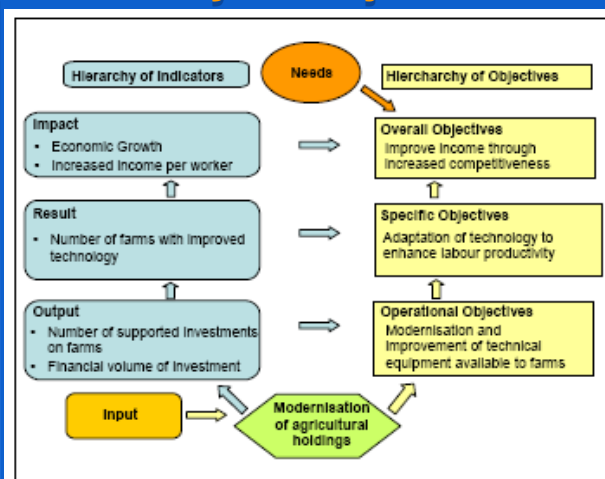
## Terms / types

- 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



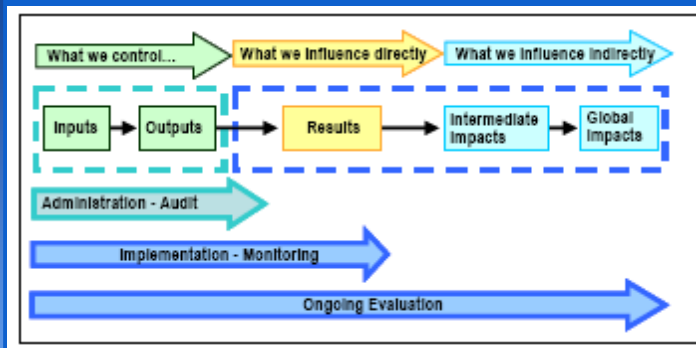
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## Hierarchy of objectives



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## Hierarchy of objectives



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## 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



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## 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**



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## 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.



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## 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



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## 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.



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## 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



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## 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



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## EU Context: SEA legislation

### Strategic Environmental Assessment

- Directive 2001/42/EC

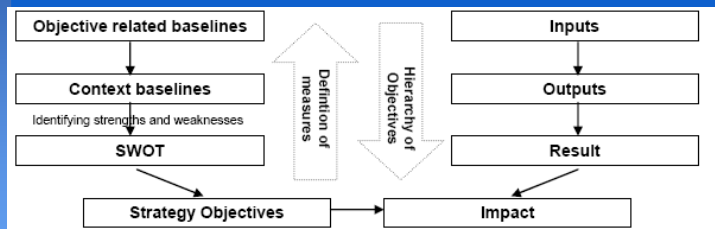


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## EAFRD - CMEF

- Directive 1698/2005 determines the set up of a Common Monitoring & Evaluation Framework: CMEF for rural development programmes



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## CMEF: LC related guidelines

Measure	Improving and developing infrastructure related to the development and adaptation of agriculture and forestry (Article 20 (b) (v) of Reg. (EC) N° 1698/2005)
Measure Code	125
Rationale of the measure	Improvement of the infrastructure related to the development of the agricultural and forestry sector contributes to the competitiveness of farming and forestry.
Content of the measure	Support for investments in infrastructure related to the development and adaptation of agriculture and forestry. Support may cover : <ul style="list-style-type: none"> <li>- access to farm and forest land</li> <li>- land consolidation</li> <li>- energy supply</li> <li>- water management (improvement of irrigation networks, drainage, ...)</li> </ul>
Target group	not specified
Target area	Not specified
Common indicators	baseline - Economic development of primary sector input - Amount of public expenditure realised (total versus EAFRD) output - Number of operations supported (division according to the type of land and to the type of operation) - Total volume of investment (division according to the type of land and to the type of operation) result - Increase in gross value added in supported holdings (division according to type of sector) impact - Economic growth - Labour productivity



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## 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



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## 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.



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## 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



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## 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

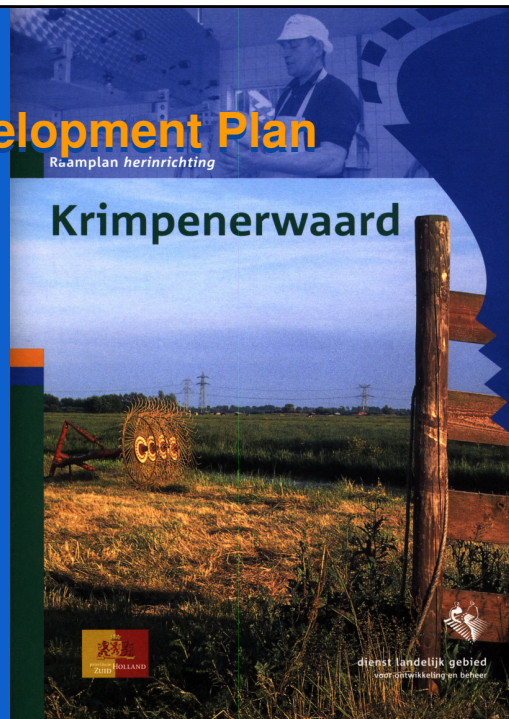


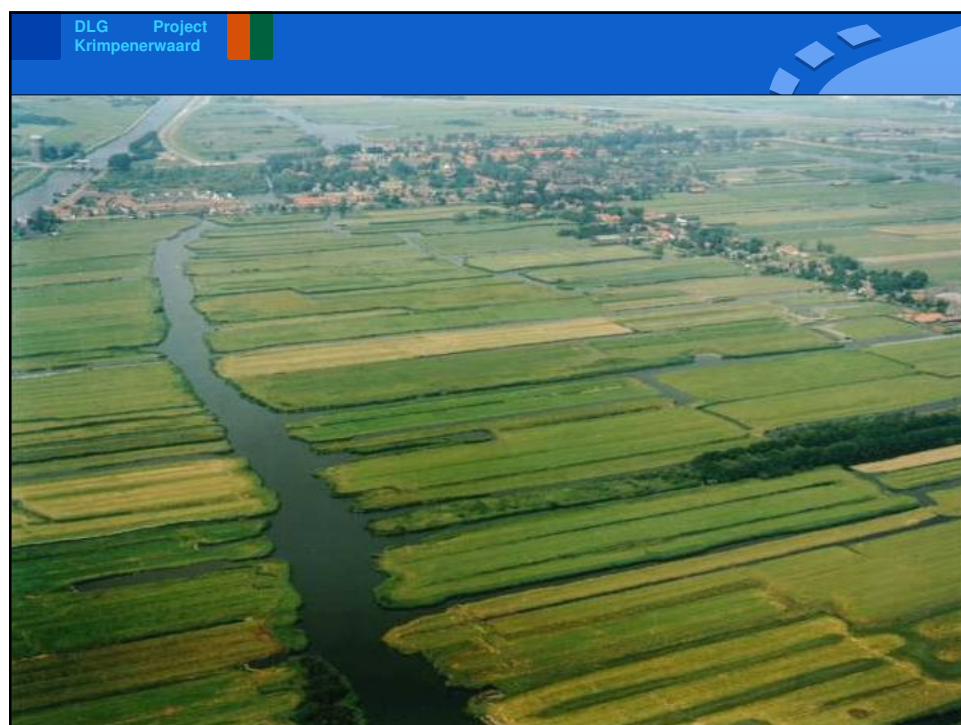
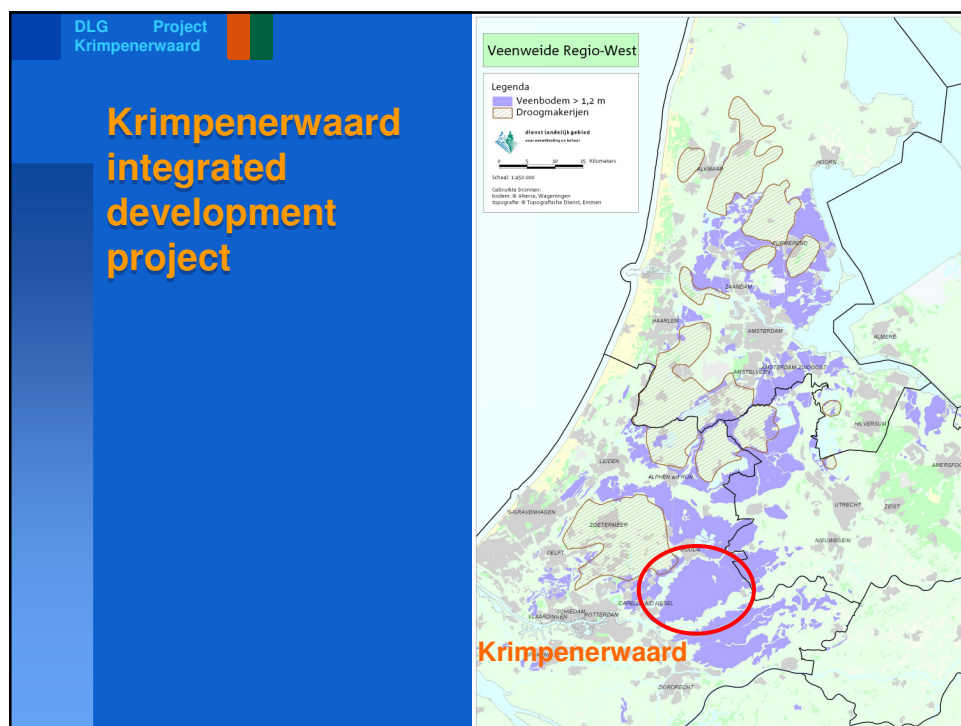
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DLG Project  
Krimpenerwaard

## Integrated Development Plan

- Nature
- Farm access roads
- Recreation
- Land consolidation



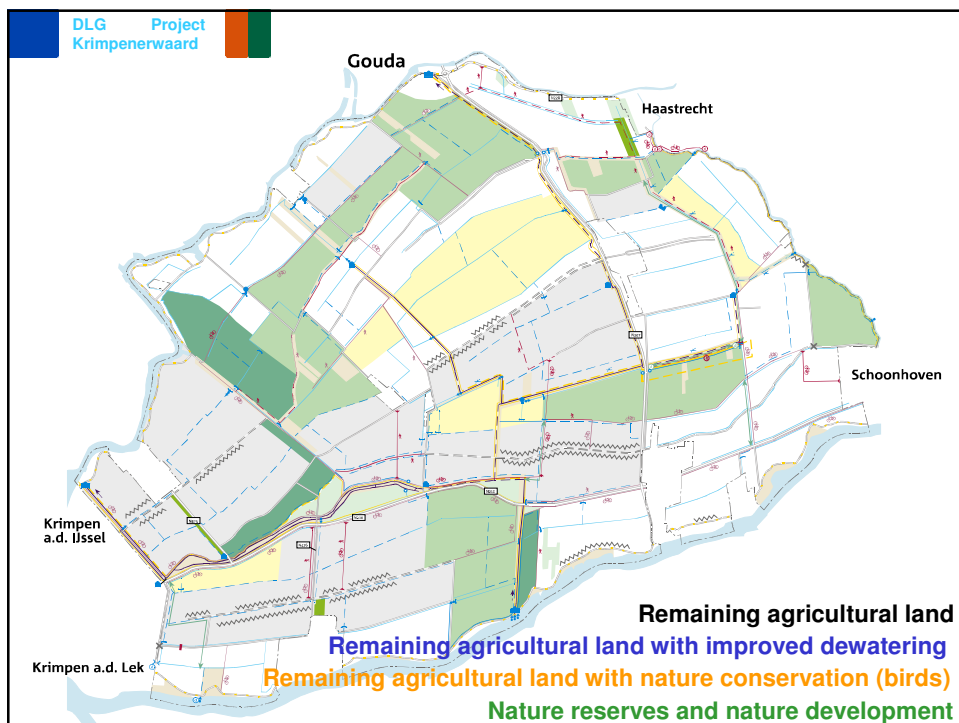


## Example: Integrated rural development project

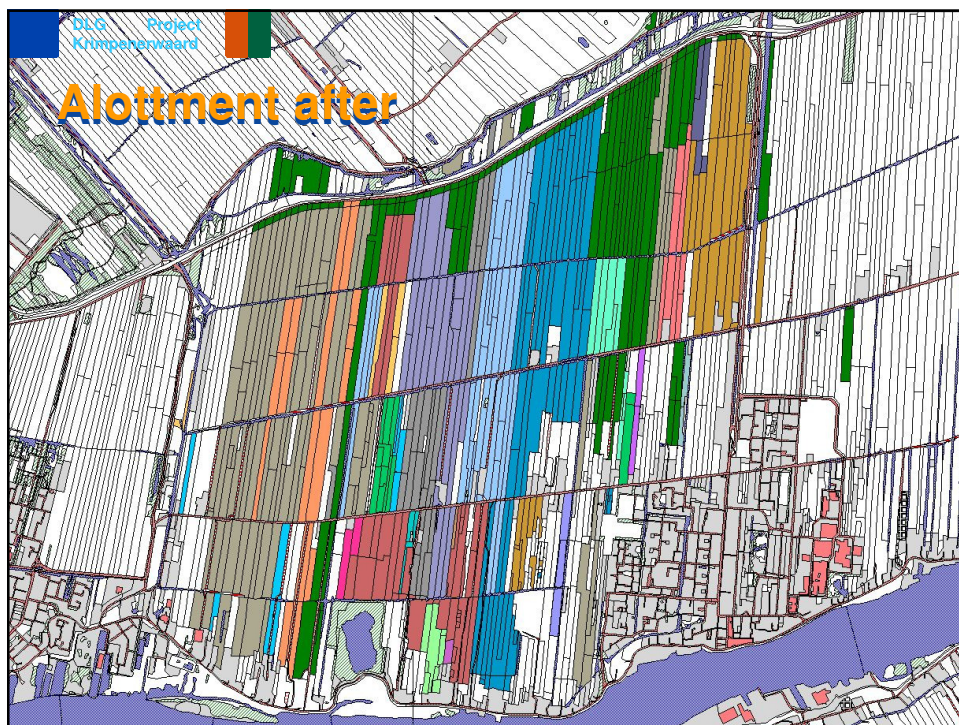
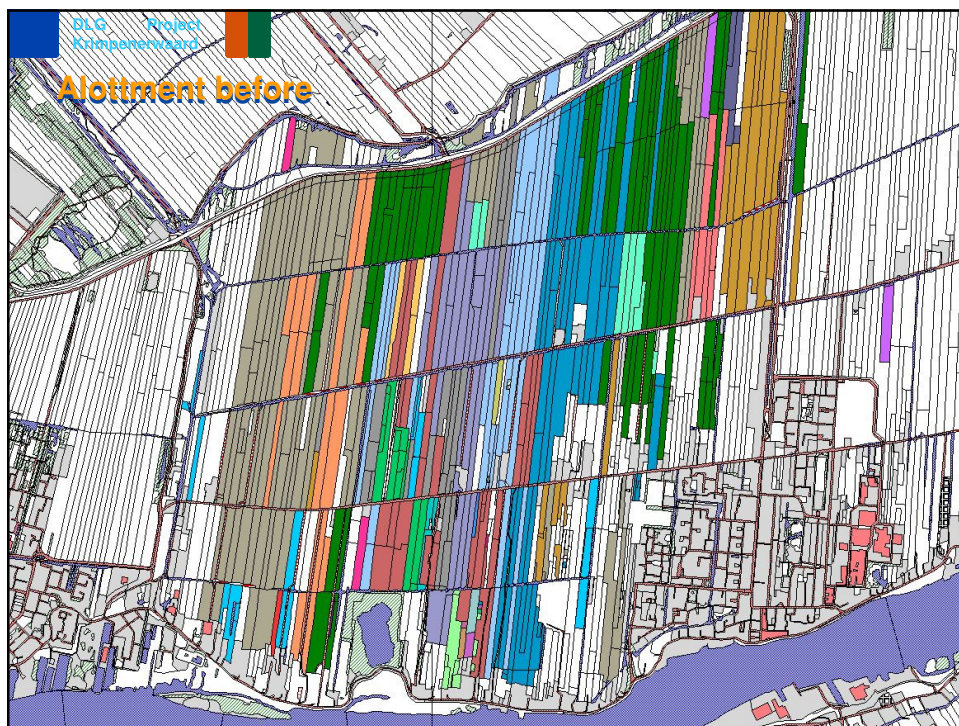
- First result:
- Development plan and EIA:
- Describing effects of:
  - current situation,
  - the likely evolution without implementation
  - 2 alternatives
- Effect on agriculture, nature, culture heritage,
- Public consultation ----> Report



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## Impact land consolidation

	1999	A.D.	plan
• % farmers with > 60% house plots	42%	44%	99%
• % farmers with > 80% house plots	24%	10%	61%
• amount of plots / farm	3.7	4.6	1.8
• area with dewatering > 60 cm	22%	22%	40%
• Cost benefit analysis: internal rate of return			6%



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## 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

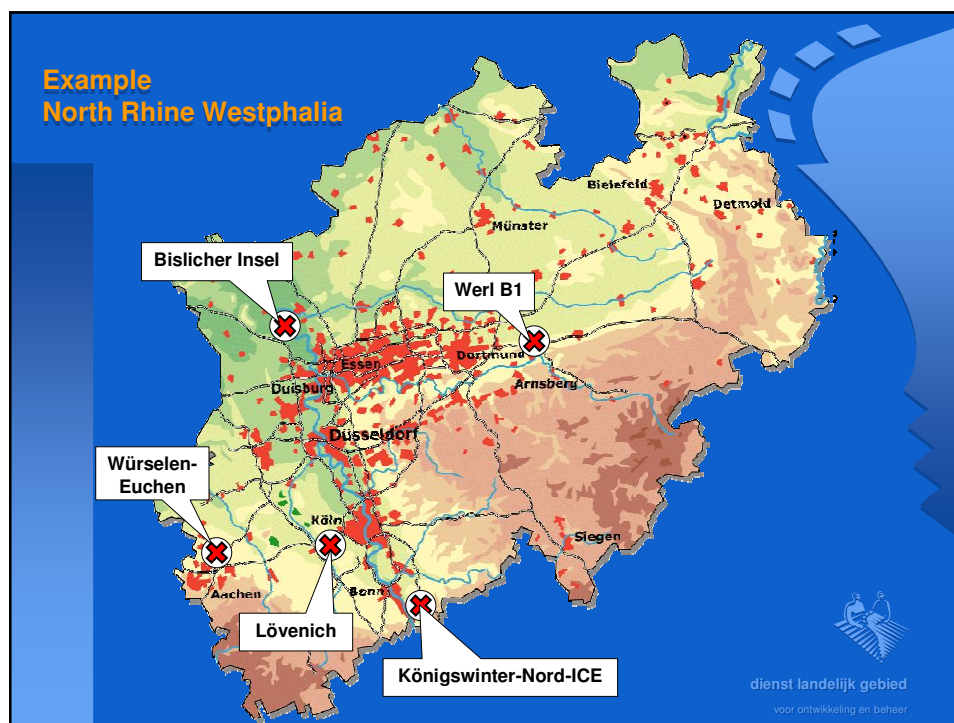
### Ex post

- General weak, limited to some incidental cases
- Negative image of land consolidation: expensive / long duration



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**Choice of the projects:  
some figures**

Projects	Road			Rail	Flood prev.
	Werl B1	Würselen-Euchen	Lövenich	Königs-winter	Bislicher Insel
Responsible LC authority	Soest	Euskirchen	Siegburg	Siegburg	Mönchengladbach
Main targets: Allocation of area for	Country road	Ring road	Country road	Railway track	Dike
Length of the line (in the LC area)	3,0 km	3,8 km	4,2 km	5,5 km	6,0 km
Costs of the project (without land acquisition)	9,5 Mio. €	2,0 Mio. €	2,1 Mio. €	124,2 Mio. €	24,5 Mio. €
LC area	121 ha	490 ha	469 ha	511 ha	706 ha
Concerned land owners	55	416	237	233	126
Concerned parcels	162	619	279	1.194	519

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## Steps of the analysis of the value added

1. **Managerial analysis:**
  - Results of the “cost-benefit-analysis”
  - Estimations
2. **Impact analysis**
  - Customer satisfaction (interview of the parties concerned and of external experts)
3. **Economic analysis**
  - **Impact-orientated consideration**
    - Tangible impacts (countable)
    - Intangible impacts (uncountable)



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## 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



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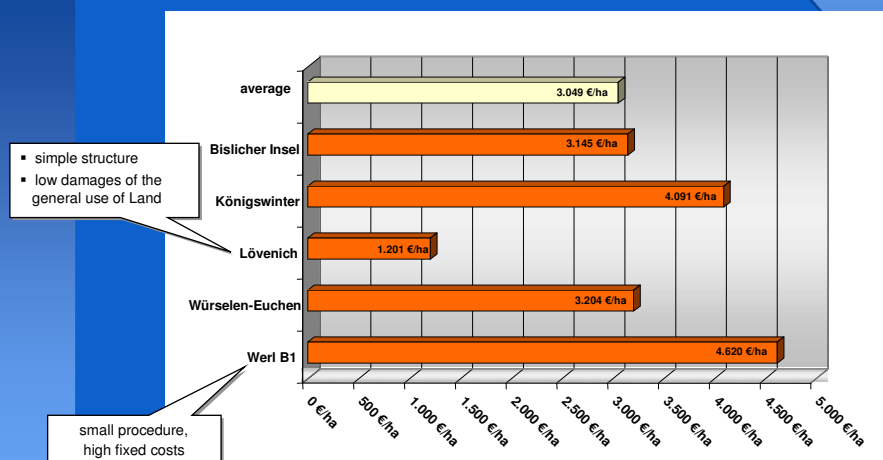
## Managerial analysis

**Total costs:  
8.600.000 €**

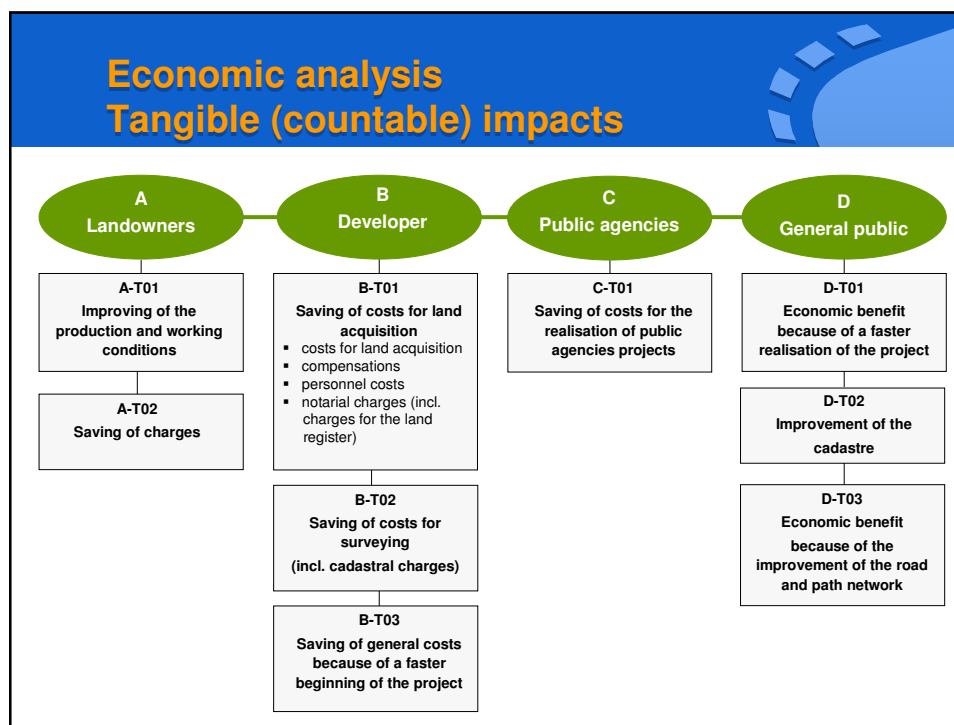
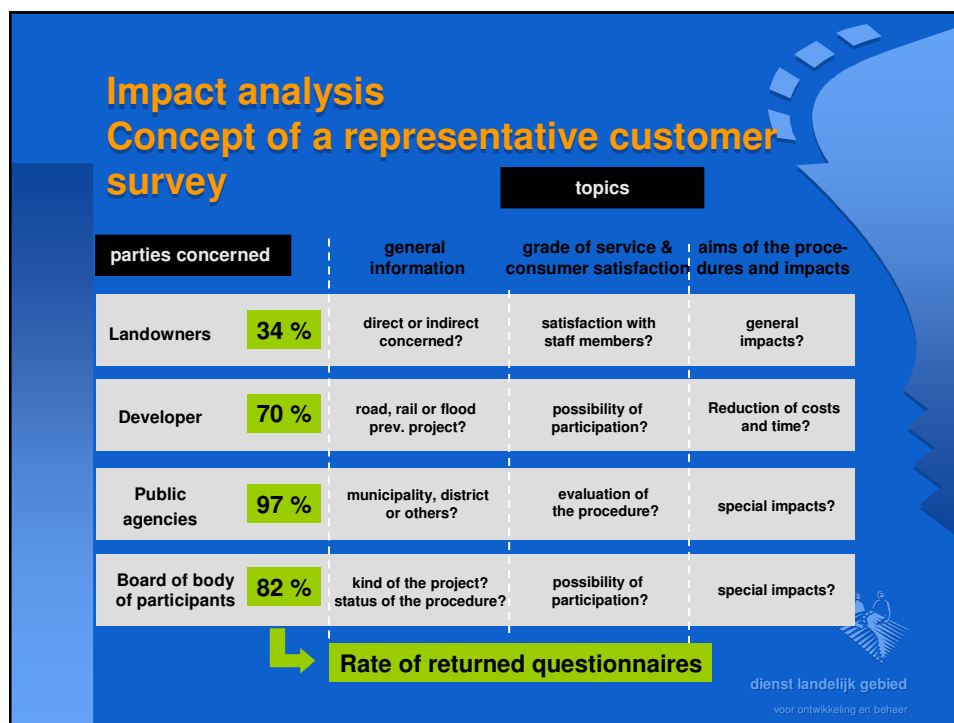
	Road - projects			Rail	Flood prev.
	Werl B1	Würselen-Euchen	Lövenich	Königswinter	Bislicher Insel
Personel costs (operating dep.)	303.283 €	868.736 €	276.553 €	1.095.523 €	1.266.469 €
Personal costs (cooperate personnel)	93.714 €	268.439 €	85.455 €	338.517 €	391.339 €
Costs of contribution in kind and of services	70.824 €	202.872 €	64.582 €	255.833 €	295.753 €
Costs of external placing	55.029 €	114.755 €	88.180 €	265.367 €	106.939 €
Costs of photogrammetry	0 €	13.564 €	12.167 €	0 €	16.334 €
<b>Total costs of the procedure of the local LC authority</b>	<b>522.850 €</b>	<b>1.468.366 €</b>	<b>526.937 €</b>	<b>1.955.240 €</b>	<b>2.076.834 €</b>
Allocation of costs of ULCA	26.927 €	75.621 €	27.137 €	100.695 €	106.957 €
Allocation of costs of DistrGov	5.804 €	16.299 €	5.849 €	21.703 €	23.053 €
Allocation of costs of Ministry	3.451 €	9.691 €	3.478 €	12.905 €	13.707 €
<b>Total costs of the procedure</b>	<b>559.032 €</b>	<b>1.569.976 €</b>	<b>563.401 €</b>	<b>2.090.543 €</b>	<b>2.220.551 €</b>
Costs of common facilities	0 €	878.000 €	0 €	88.000 €	0 €
Other costs (e.g. surveying)	27.616 €	157.000 €	58.787 €	259.000 €	120.000 €
<b>Total implementation costs</b>	<b>27.618 €</b>	<b>1.035.000 €</b>	<b>58.787 €</b>	<b>347.000 €</b>	<b>120.000 €</b>
<b>Total cost</b>	<b>586.650 €</b>	<b>2.604.976 €</b>	<b>622.188 €</b>	<b>2.437.543 €</b>	<b>2.340.551 €</b>

## Efficiency of the procedures

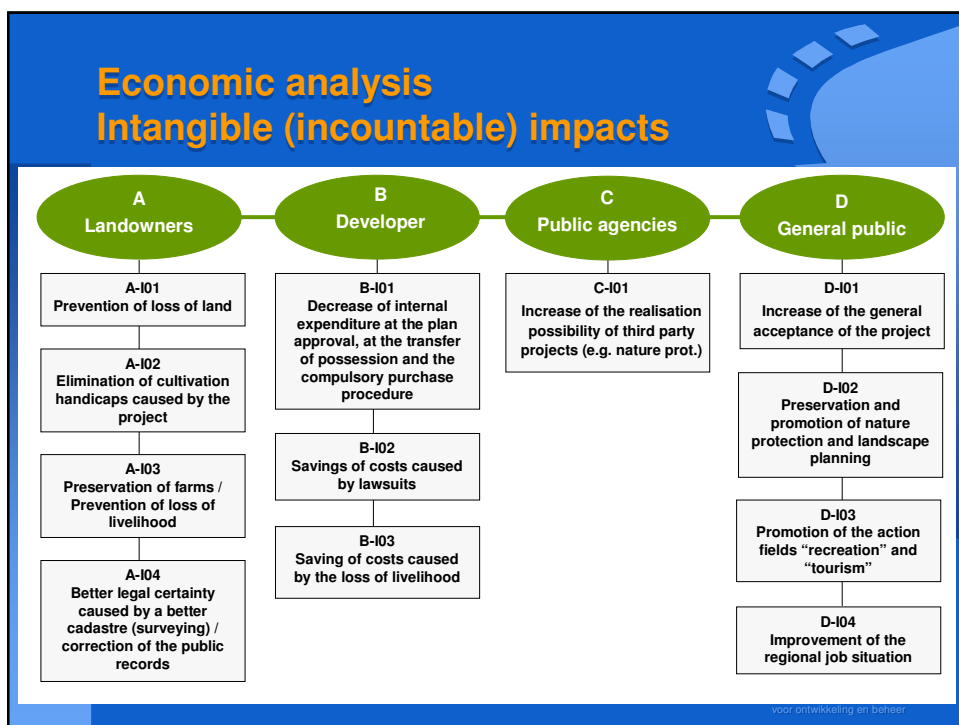
Costs of the procedure referring to one hectare



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Economic analysis Tangible (countable) impacts						
Tangible impacts	Road			Rail	Flood prev.	Total benefit
	Werl B1	Würselen-Euchen	Lövenich	Königswinter	Bislicher Insel	
Land owners	7.024 €	597.092 €	69.300 €	140.450 €	56.000 €	869.866 €
A-T01	0 €	573.000 €	50.000 €	95.000 €	34.000 €	752.000 €
A-T02	7.024 €	24.092 €	19.300 €	45.450 €	22.000 €	117.866 €
Developer	514.688 €	1.196.655 €	997.307 €	2.265.004 €	1.051.045 €	6.024.699 €
B-T01	200.327 €	937.826 €	468.176 €	845.296 €	422.660 €	2.874.285 €
B-T02	268.479 €	187.170 €	408.959 €	487.803 €	527.803 €	1.880.214 €
B-T03	45.882 €	71.659 €	120.172 €	931.905 €	100.582 €	1.270.200 €
Public agencies	---	---	362.080 €	---	296.079 €	658.159 €
General public	1.010.113 €	1.362.339 €	482.199 €	1.523.355 €	1.200.430 €	5.578.436 €
D-T01	934.599 €	196.758 €	207.204 €	1.221.963 €	573.877 €	3.134.401 €
D-T02	75.514 €	287.581 €	274.995 €	301.392 €	626.553 €	1.566.035 €
D-T03	---	878.000 €	---	---	---	878.000 €
Total benefit (projects)	1.531.825 €	3.156.086 €	1.910.886 €	3.928.809 €	2.603.554 €	13.131.160 €



## Balance sheet of the added value

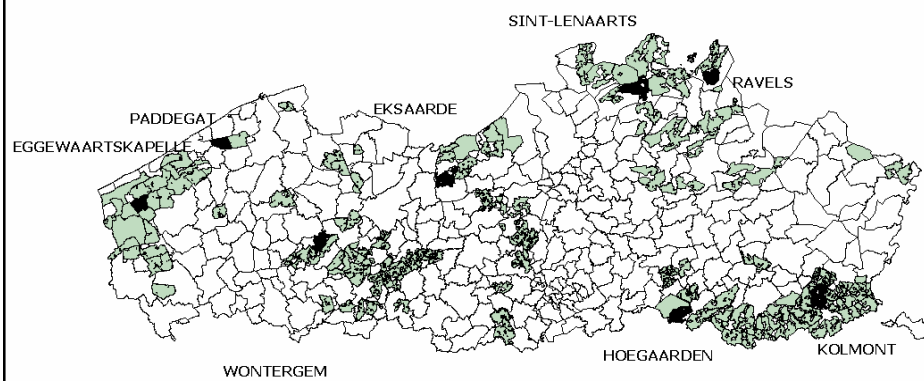
	costs	tangible benefit	intangible benefit
Werl B1	586.650 €	1.531.825 €	<ul style="list-style-type: none"> <li>Prevention of loss of land</li> <li>Preservation of farms / Prevention of loss of livelihood</li> <li>Savings of costs caused by lawsuits</li> <li>Increase of the realisation possibility of third party projects (e.g. nature prot.)</li> <li>Increase of the general acceptance of the project</li> <li>Improvement of the nature protection</li> <li>Promotion of the action fields "recreation" and "tourism"</li> </ul>
Würselen-Euchen	2.604.976 €	3.156.086 €	
Lövenich	622.188 €	1.910.886 €	
Königswinter	2.437.543 €	3.928.809 €	
Bislicher Insel	2.340.551 €	2.603.554 €	
<b>total</b>	<b>8.591.908 €</b>	<b>13.131.160 €</b>	

### Flanders:

### Qualitative ex post evaluation

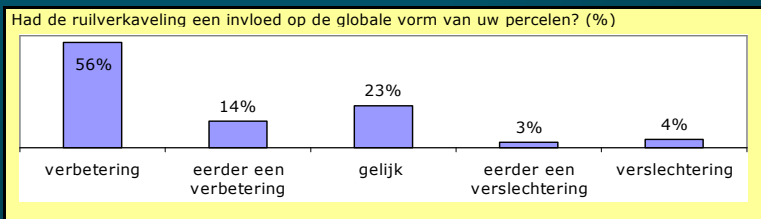
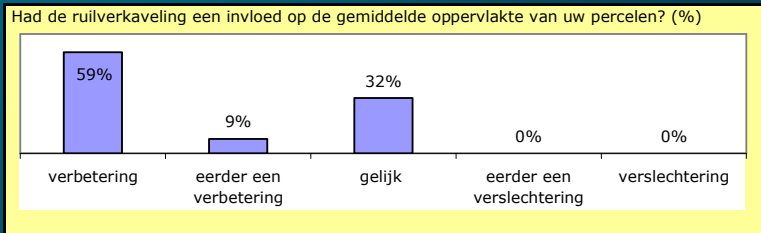
#### Problem and objective

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



## RESULTS

### Agricultural aspects – direct effects



## 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



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## Questions

- Is Impact Assessment of LC an issue in your country? Why? What type: ex ante? Ex post? Project level? Programme level?
- 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?



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**Thank you very much!!**



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