UNIVERSITÄT LEIPZIG

Institutional Analysis of Payment for Watershed Ecosystem Services

Lessons from two case studies in Colombia and Germany

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OUTLINE

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  - PWES as an institution
  - Framework of analysis
- METHOD
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  - Conditions of institution durability observed in the cases
- CONCLUSION

INTRODUCTION

- Payment for Watershed Ecosystem Services (PWES)

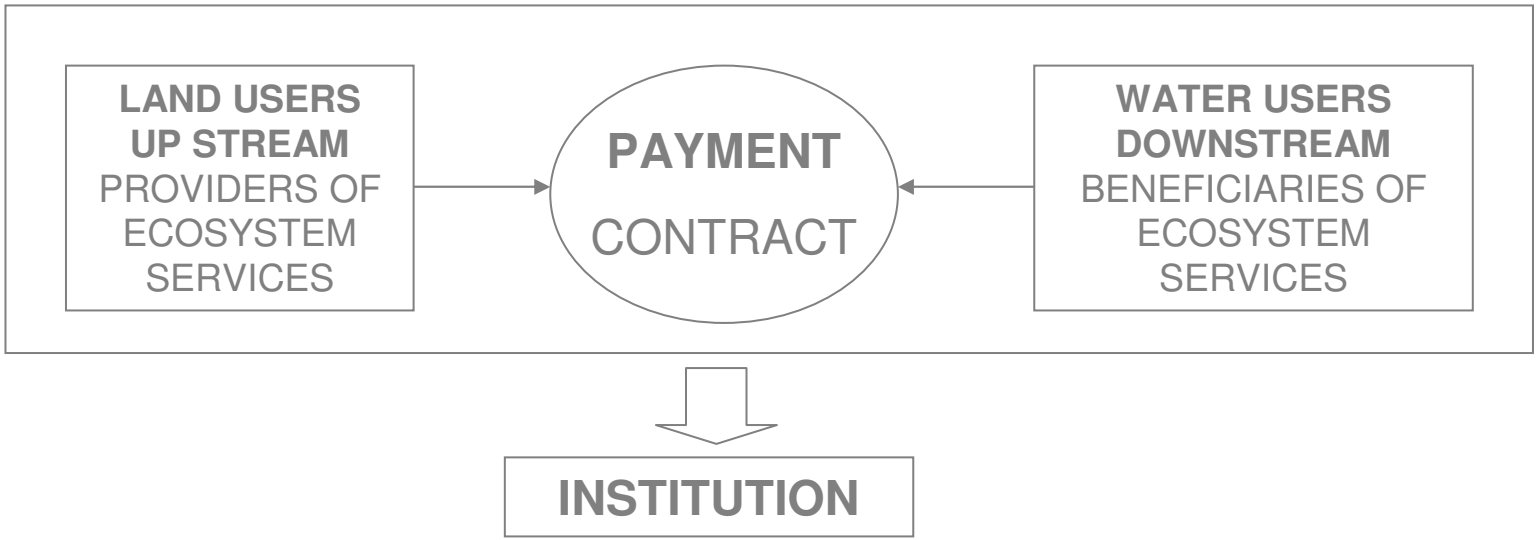
"…mechanisms addressed to maintain or modify land uses that affect water quality and quantity down streams". (UNDESA, 2003)

- Alternative to command and control instrument
  - In some cases more effective (environmental results) and more efficient (Brouwer et al., 2002.)
  - Changes in land use instead remedial solutions

- Interest of researching on the conditions making PWES endurable

INTRODUCTION

PWES AS INSTITUTION



PWES: Institution established to resolve the environmental conflict upstream – downstream

(Paavola, 2007)

INTRODUCTION

Objective: identification of conditions under which PWES are endurable institutions

Framework of analysis: Institutional sustainability of Common Pool Resources (CPR).

Wade (1987), Ostrom (1990), Baland and Plateau(1996), Agrawal 2001.

Applicability to PWES analysis:

- Characteristis of CPR and watershed ecosystem services:
  - Difficulty of exclusion: of use – farmers
  - rivalness: on resource use water – land

CRITICAL ENABLING CONDITIONS FOR INSTITUTIONAL SUSTAINABILITY OF CPR

1. RESOURCE SYSTEM
   - Feasibility of improving the resource
   - Indicators of resource conditions
   - Traceability of resource improvement
   - Well-demarcated boundaries
   - Small size
2. GROUP CHARACTERISTICS
   - Small size
   - Past successful/organizational experiences
   - Appropriate leadership
   - Trust
   - Low poverty
3. RELATION RESOURCE AND GROUP
   - Overlap between residential and resource location
   - High levels of dependence on resource system
   - Fairness in allocation of benefits from resource
4. INSTITUTIONAL ARRANGEMENTS
   - Rules are easy an simple to understand
   - Ease in enforcement of rules
   - Graduated sanctions
5. EXTERNAL ENVIRONMENT
   - Supportive external sanctioning institutions
   - Low levels of articulation with external markets

(AGRAWAL, 2001)

METHOD

- Explorative case study

  2 case studies
  - Colombia, Water users Association of Bolo River
  - Germany, Organic farming in the catchment area of Mangfalltal

  - Sources of evidence:
    - documentation
    - archival records
    - interviews

Water users association of Bolo River, Asobolo Valle del Cauca, Colombia

Source: http://maps.google.com/maps?hl=es&rls=com.microsoft:en-US&q=south+america&gs_upl=2547l4750l0l4937l13l5l0l5l5l0l235l983l0.2.3l6l0&bav

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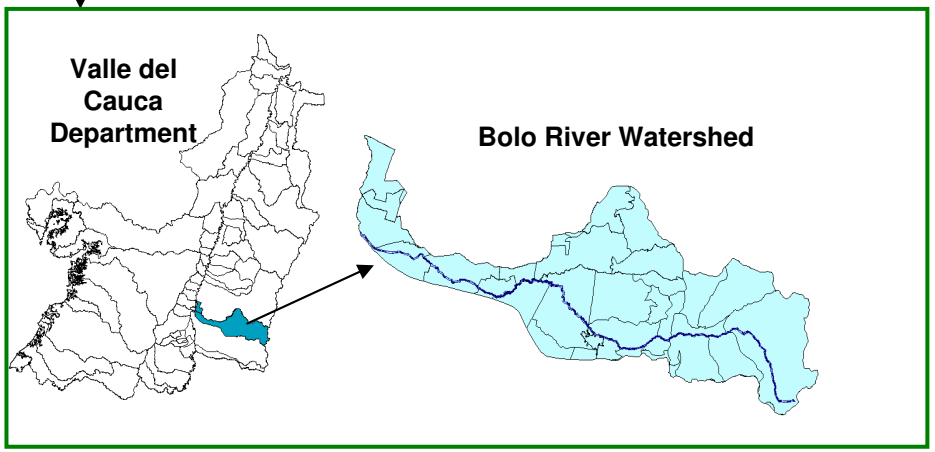
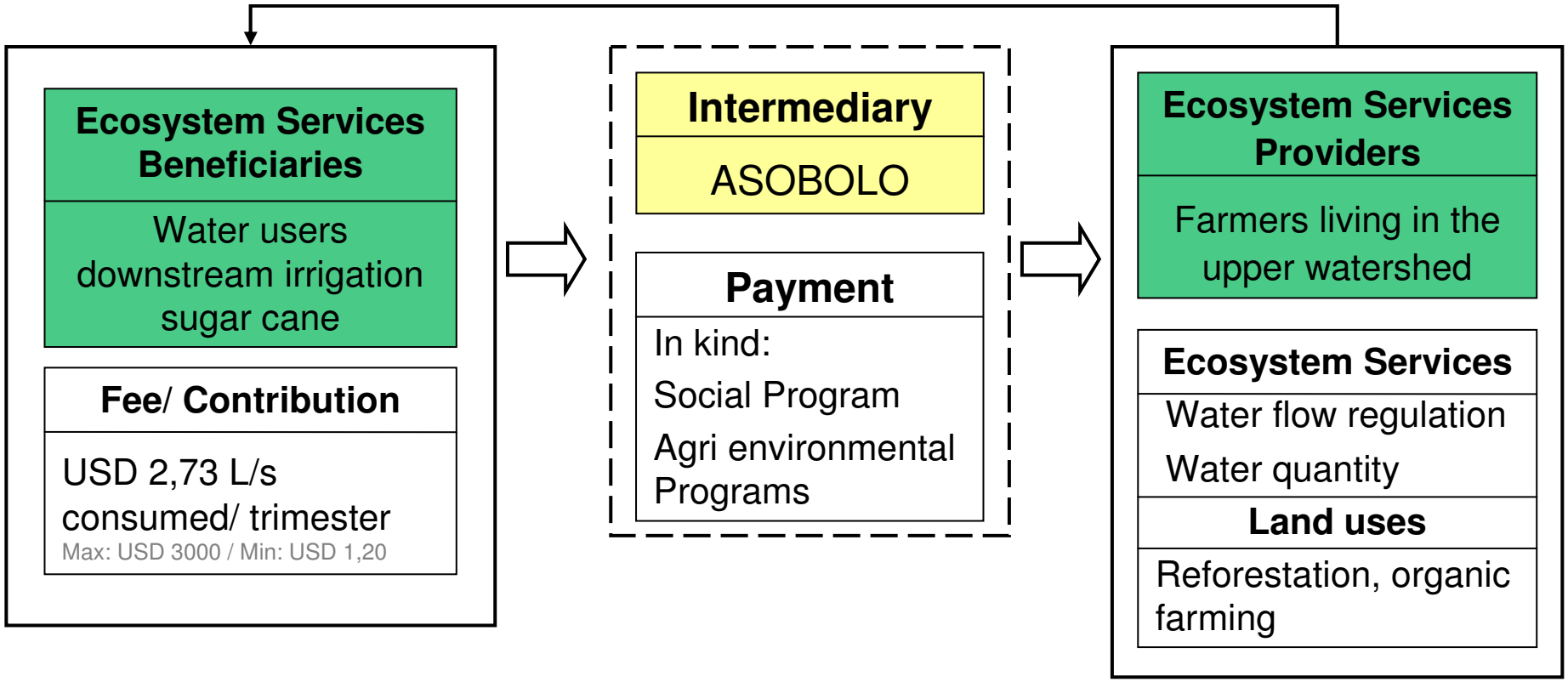


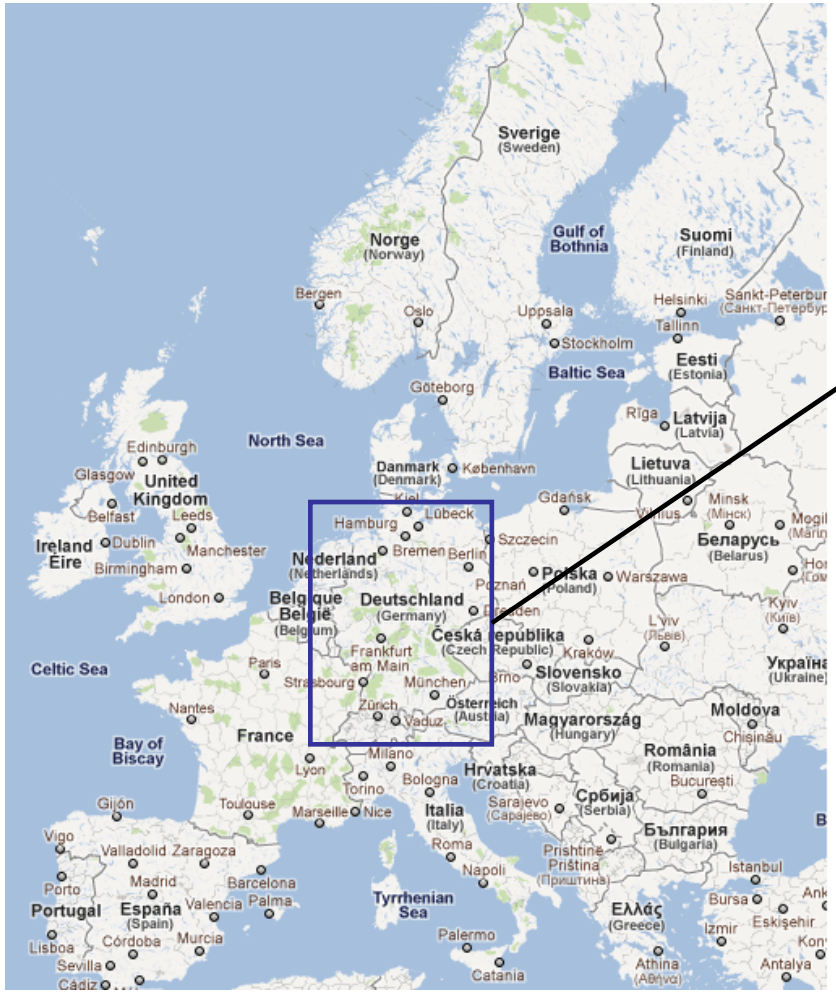
Source: Corporación Autónoma Regional del Valle del Cauca, 2007

Water users association of Bolo River, Asobolo Valle del Cauca, Colombia.

- Asobolo (1992)



Organic farming in the Mangfalltal Catchment Area, Germany



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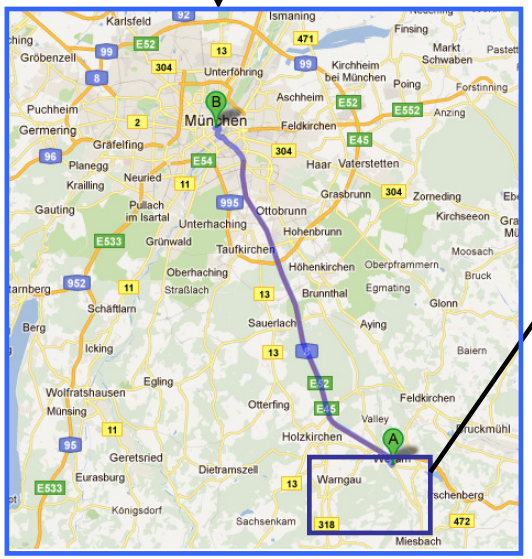
Source:http://de.wikipedia.org/wiki/Bayern



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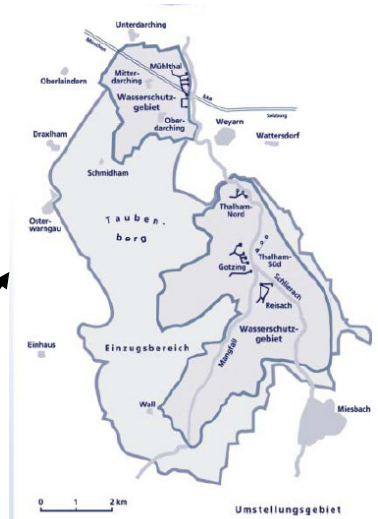

(3) Umstellungsgebiet im Mangfalltal

Source: Grüneliga, 2007

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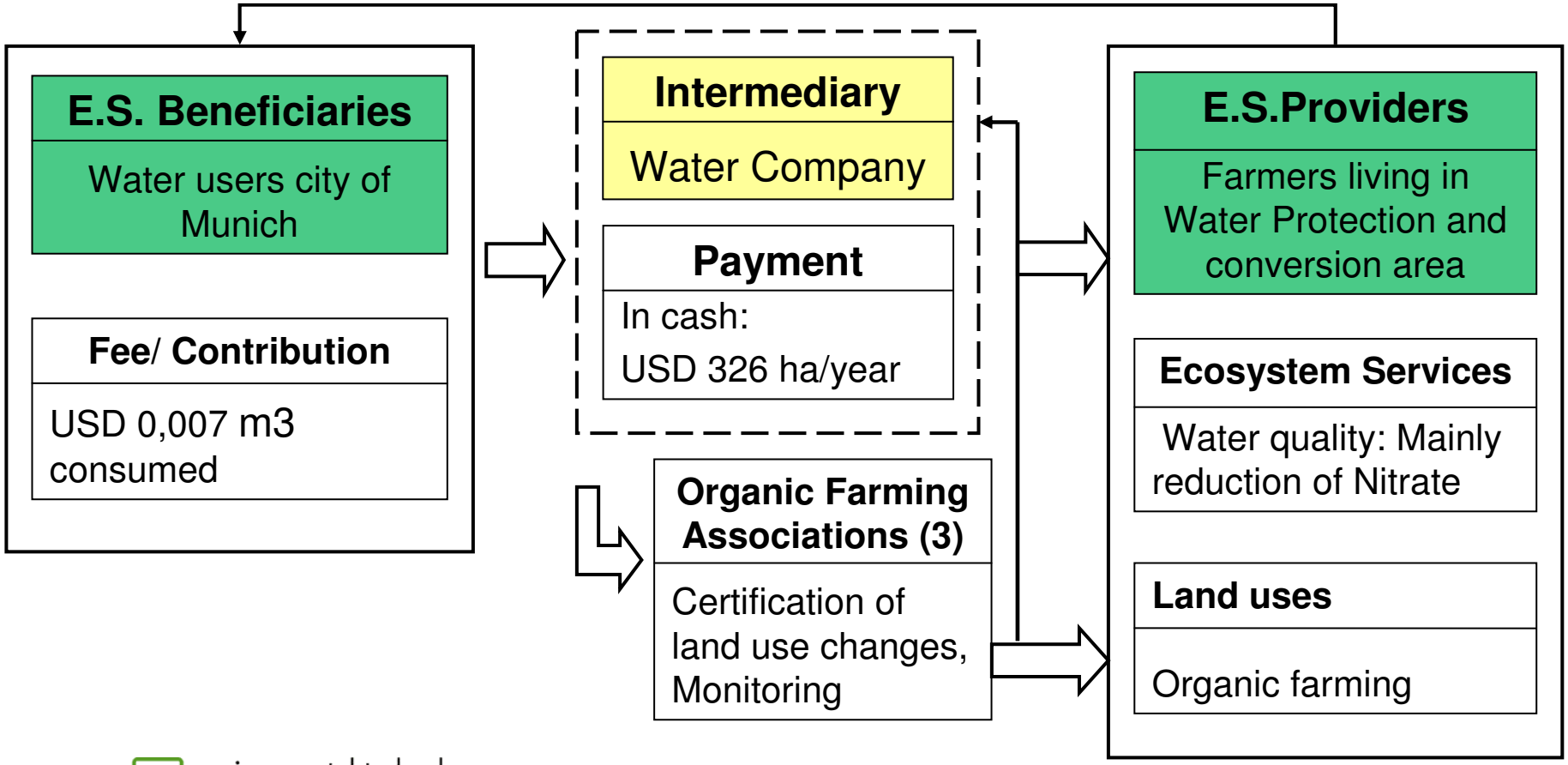
Organic farming in the Mangfalltal catchment area Munich, Germany

- Mangfalltal (1993)



RESULTS AND DISCUSSION

SIMILARITIES (15 out of 18 conditions)

Emerging process:

- Feasibility of improvement the resource
- Indicators of resource available
- High dependence of the resource (water users)
- Small group in the design

RESULTS AND DISCUSSION

Continued operation of the scheme

- **Group characteristics**
  - Previous organizational experiences
  - Appropriate leadership

- **Institutional arrangement**
  - Rules simple and easy to understand
  - Ease of enforcement of the rules
  - Monitoring
  - Graduated sanctioning mechanism

RESULTS AND DISCUSSION

DIFFERENCES (3 out of 18 conditions)

- **Traceability**
  - Mangfalltal: reduction of nitrate levels
  - Asobolo: no changes in water flow registered yet

- **Trust**
  - Asobolo: scheme based on oral contracts, reduction of transaction costs

  - Mangfalltal: design of the scheme, OFAs closer to the farmers than the water company

- **Levels Poverty - Asobolo**
  - Obstacles for participation overcome
    - Objective of poverty alleviation

CONCLUSION

- The differences from developing and developed countries are evident, however, several similarities regarding the conditions contributing to the durability of PWES were found

- If similarities of conditions for the durability of PWES can be found in such different contexts, they might be relevant for other PWES schemes and for future implementation.

Thank you for your attention!