



*Environmental Services for
Poverty Reduction and Food Security Workshop
Agricultural and Development Economics Division
FAO-Rome
30-31 May, 2005*

ROA

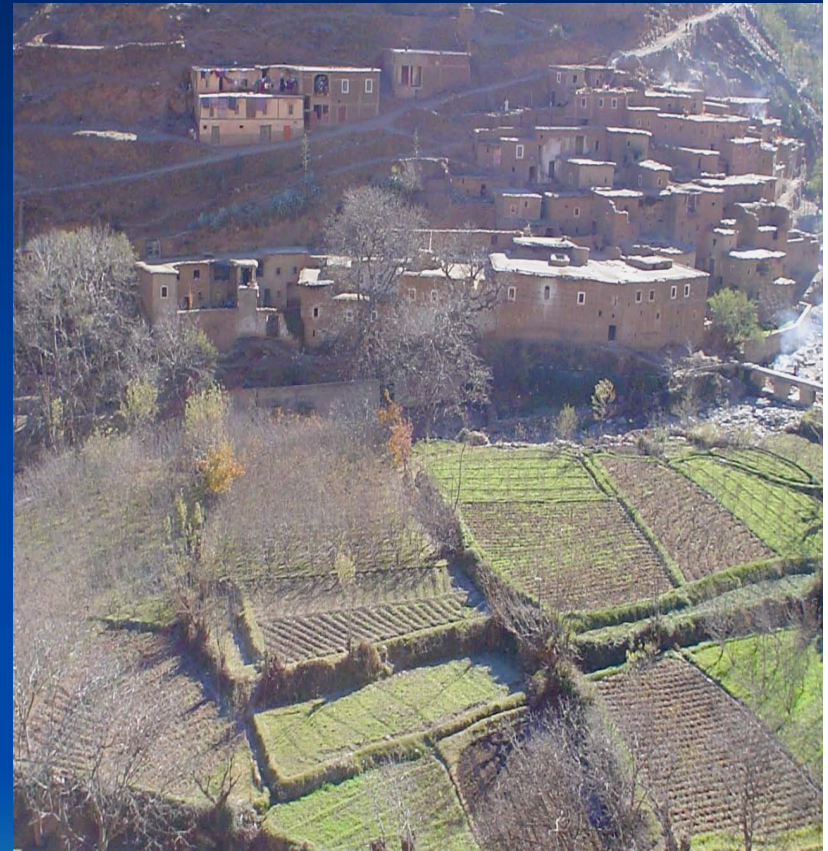
Agricultural Landscape Services (ALS) and Poverty Alleviation in Mountain areas of Morocco:

Internalization Patterns and Socioeconomic Impacts

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OUTLINE

- Recall ROA-Phase I
- ROA II Research Questions
- Objectives
- Conceptual framework
- Study progress
- Preliminary results







Recall: ROA- phase I

- Contingent Valuation Method (CVM)
 - Social demand for ag. landscape amenities
 - WTP- Agricultural landscape
 - Social demand for animal biodiversity conservation
 - WTP- local sheep breed (*Sardi*) conservation
- Hedonic Price Method (HPM)
 - Marginal price of ag. landscape attributes

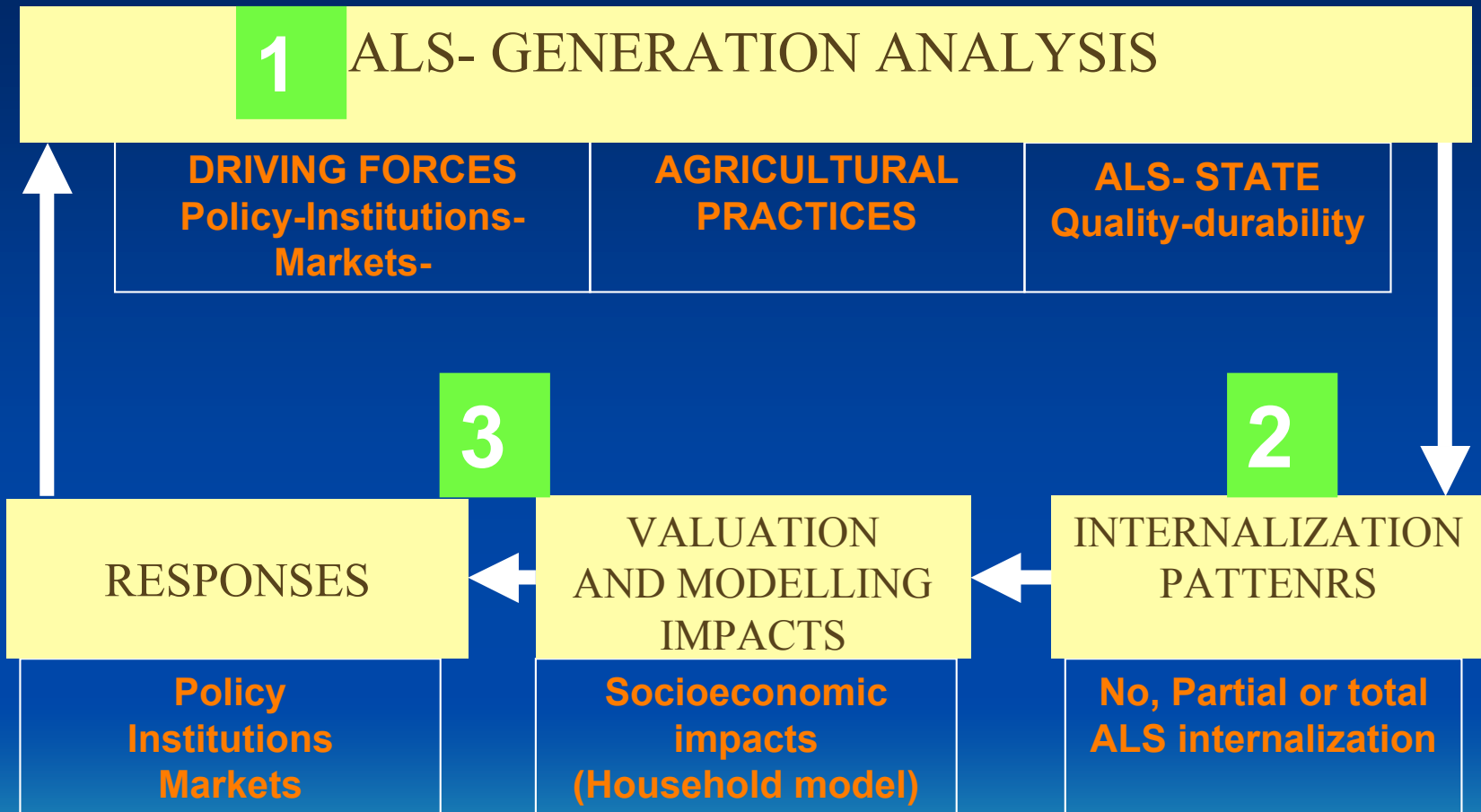
1. Two Research Questions

- How do agriculture landscape services contribute to poverty alleviation in mountain areas of Morocco ?
- What are the local ALS internalization patterns and Who are the different beneficiaries?

2. Objectives

-  Identify and characterize ALS provided by mountain agriculture system ;
-  Analyze ALS internalization patterns by specifying targeted activities, concerned markets, beneficiaries and induced impacts;
-  Assess the contribution of identified ALS to local poverty alleviation ;
-  Design a model (HH) prototype to simulate the effects of Payments for ALS effects.

3. Conceptual framework



4. Study area selection criteria

- Agricultural production system types
- Local tourism attraction and visit frequency
- Household poverty level

5. Data collected

Agriculture characteristics	ALS List	ALS Internalization / rural tourism	Poverty Incidence (HH)
Land use Major Crops Irrigation Livestock	Ag. Landscape Ag. Amenity NR Management (water and soil) Biodiversity (richness)	Hosting facilities & accommodation Transportation (mules & equipment) Track- Guide	Food-Expend. Total Expend. Income Employment Well-being

6. Study progress status

- **Work done**
 - Secondary data collected
 - Planned surveys completed (sample: 150 HH)
 - Internalization patterns analysis (underway)
- **Next steps**
 - ALS-Poverty alleviation linkages
 - Exploratory model design
 - Report writing and editing

7. Preliminary results: ALS identified

1. Ag. Landscape- cultivating services

Plantation of fruit trees on steep slopes

Construction of stone hedges along plot boundaries

Plantation of ornamental trees around houses

Keeping well ornamental trees

2. Residential places related ALS

Conservation of housing typical architecture

Conservation of traditional tools and handcrafts

7. Preliminary results: ALS identified

3. Biodiversity Conservation

- Conservation of indigenous vegetal species
- Conservation of indigenous animal breeds
- Conservation and growing of MAP

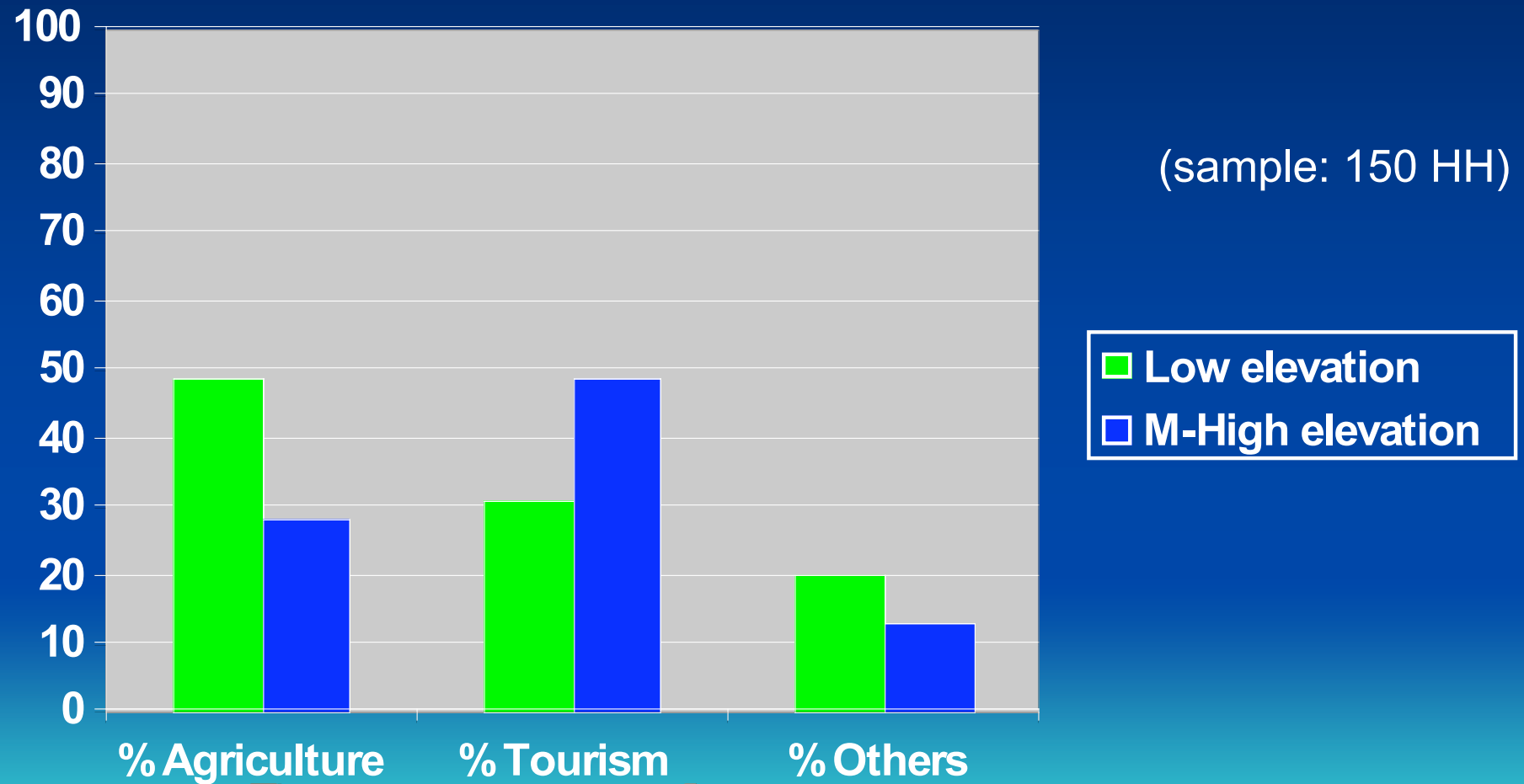
4. Soil and water conservation

- Plot terracing
- Construction and maintenance of irrigation water facilities (small basin, canal, etc.)

5. Livestock activities related ES

- Using mules to transport tourists

7. Preliminary results: HH Income sources



7. Preliminary results: HH-Income classes

Location	<1500 DH/year			1500-3000 DH/year			>30000 DH/year		
	%	%	%	%	%	%	%	%	%
	AG	TR	OT	AG	TR	OT	AG	TR	OT
Low elevation	70	20	10	55	23	22	17	56	27
M-High elevation	74	24	2	55	35	10	22	64	14
Total	72	22	6	56	30	14	20	64	16

(sample: 150 HH)

7. Preliminary results: Income sources and poverty

Poverty Level	Total income (DH/y)	% AG	% Tourism	% Others
Non poor	42 704	22	64	13
Vulnerable	19 659	53	36	10
Poor	18 962	62	18	19
Mean	26 601	41	45	14

(sample: 150 HH)

Pending questions

- Two ES categories
 - Intentional : Environmental services
 - Non intentional : Externalities
- Questions:
 - Which one to evaluate? If both,
 - Which tools to use accordingly?