SUSTAINABLE LANDSCAPES: THE FUTURE WE WANT

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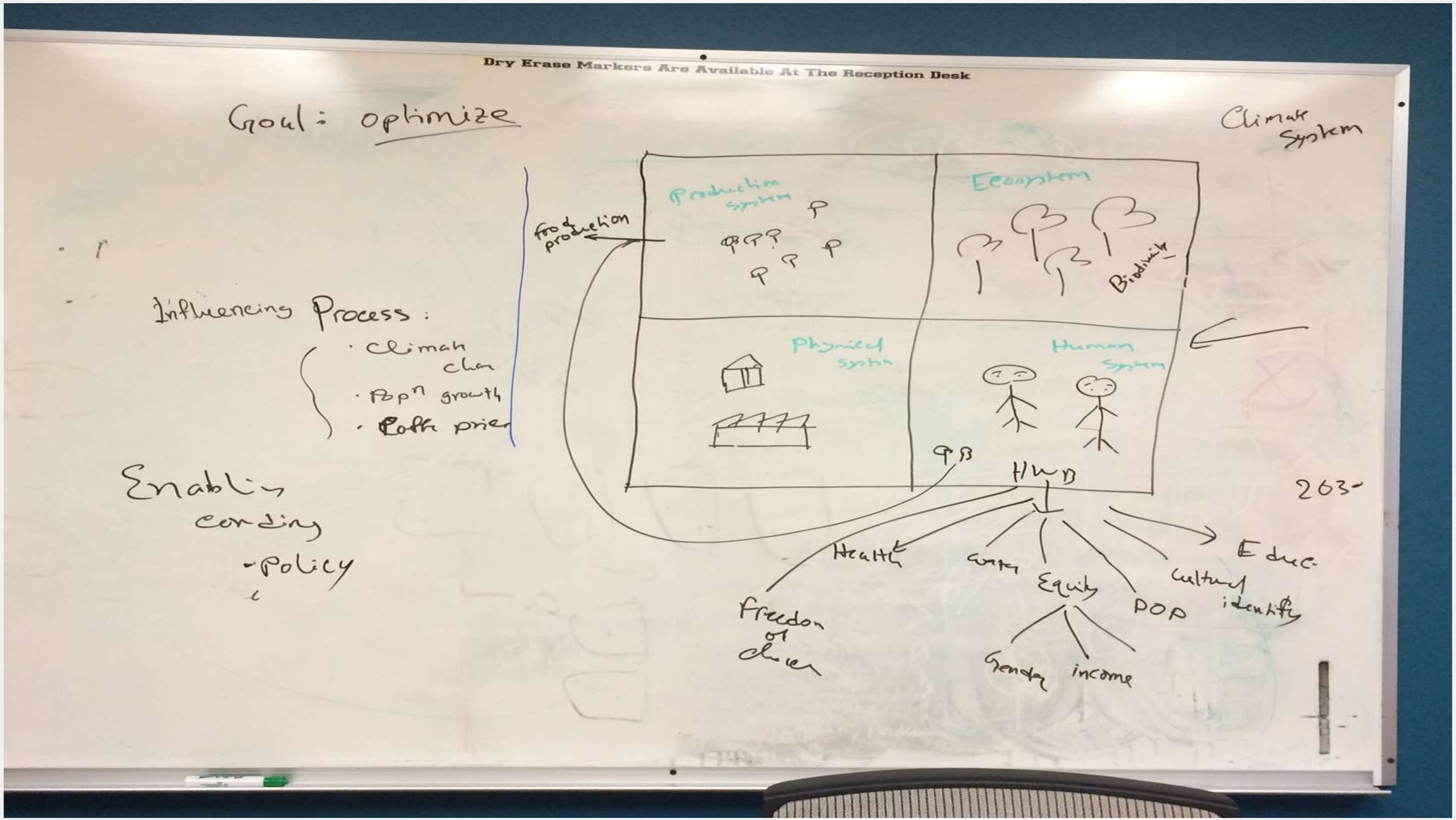
CONSERVATION INTERNATIONAL

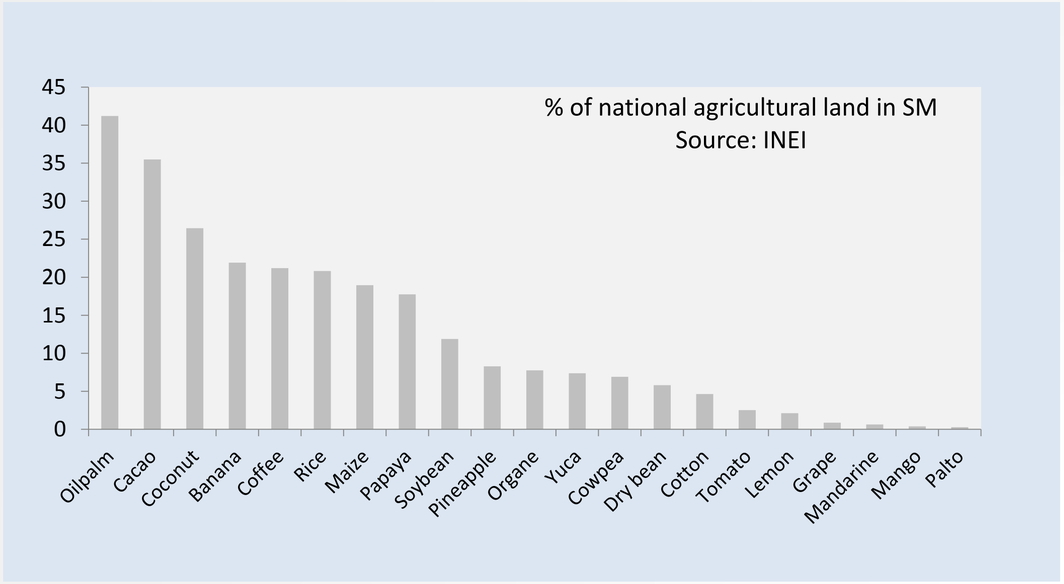
THE DRAWING BOARD

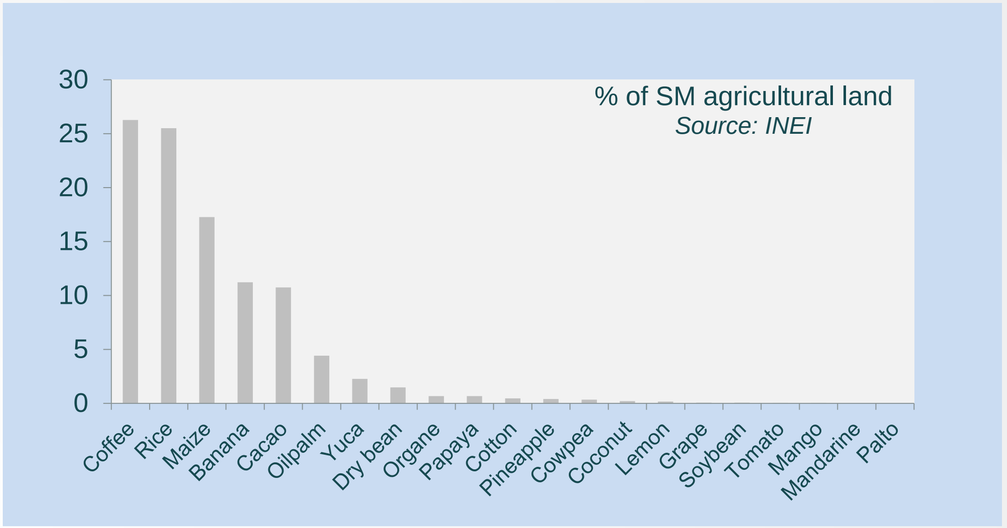


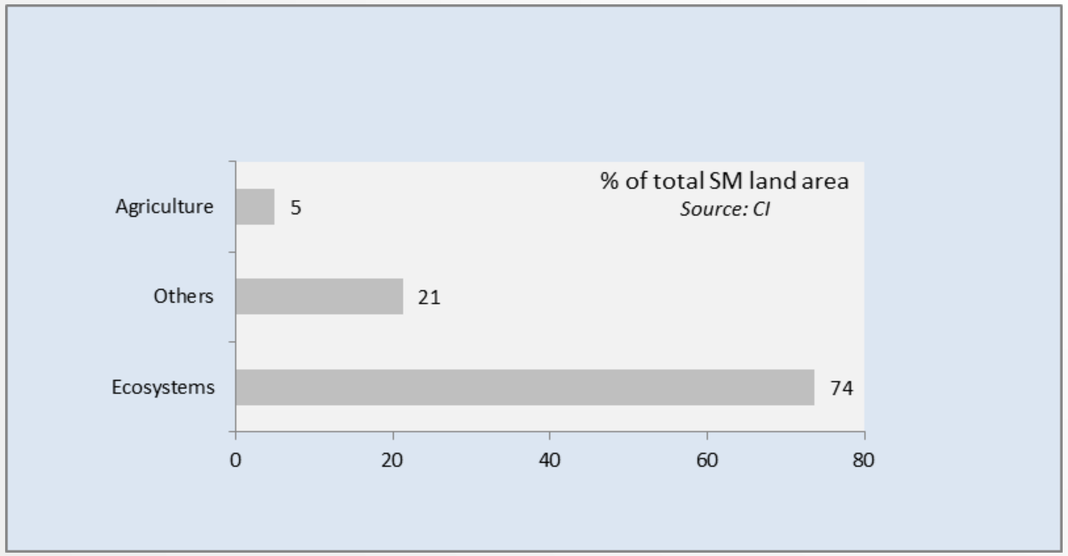
THE STUDY AREA: SAN MARTÍN, PERU

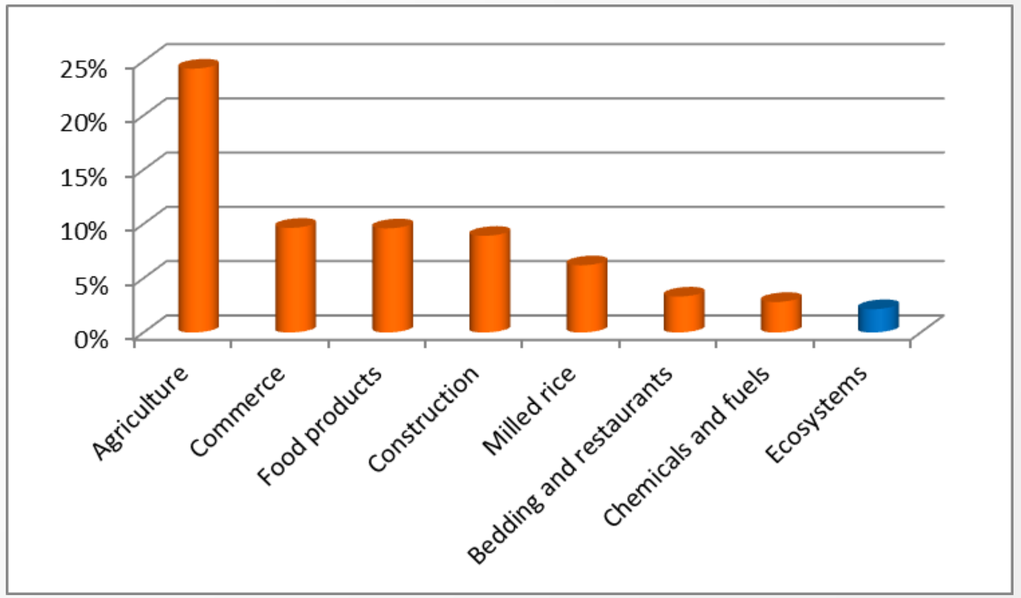
- At the foothills of the Andes Mountains in the Upper Amazon River Basin
- Area: 51.2 thousand km2 home to 728 thousand people
- Main economic sector: Agriculture, forestry and hunting
- Complex landscape: mixed forests, wide range of elevation gradients, high biodiversity and threat

AGRICULTURAL SYSTEMS IN SAN MARTIN









AGRICULTURAL SYSTEMS ANALYSIS

Objectives:

1) Assess sustainability of production systems

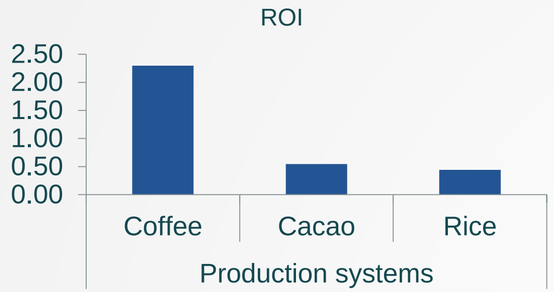
2) Forecasting and scenario building to optimize landscape production

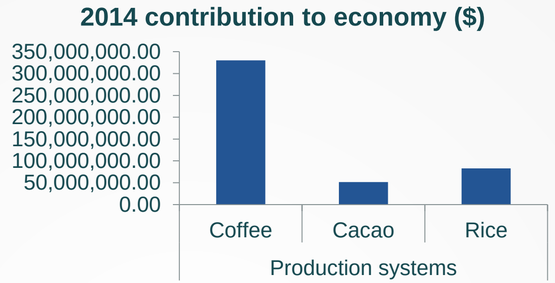
IS A PRODUCTION SYSTEM SUSTAINABLE?

- Is it financially profitable?
- Does that leave low environmental footprint?
- Does that make social equity?

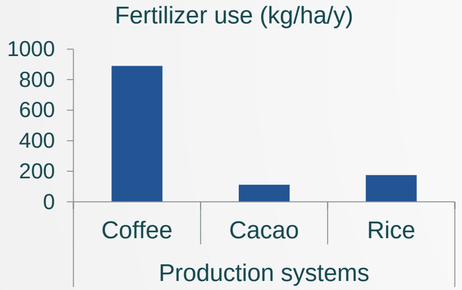
“DASHBOARD” OF SUSTAINABILITY (STYLIZED, NOT VALIDATED)

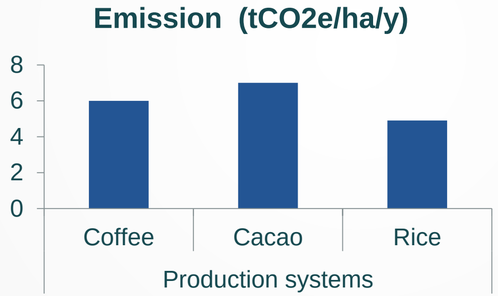
Financial

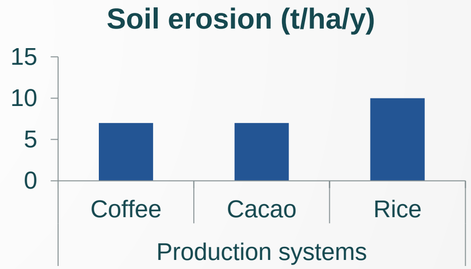


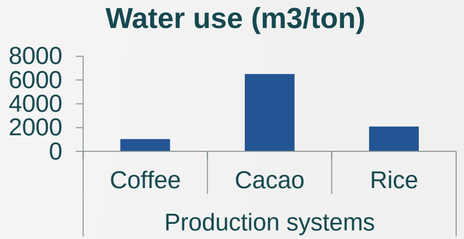


Ecological

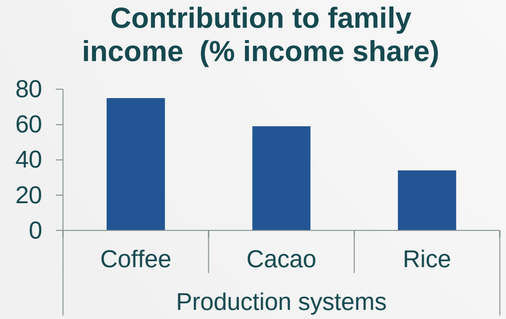


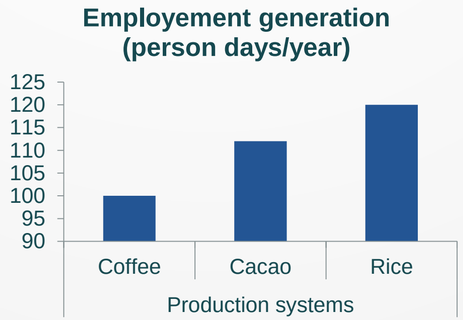


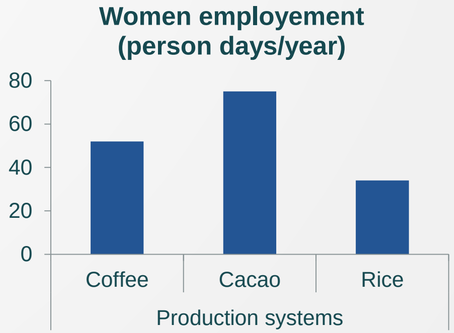




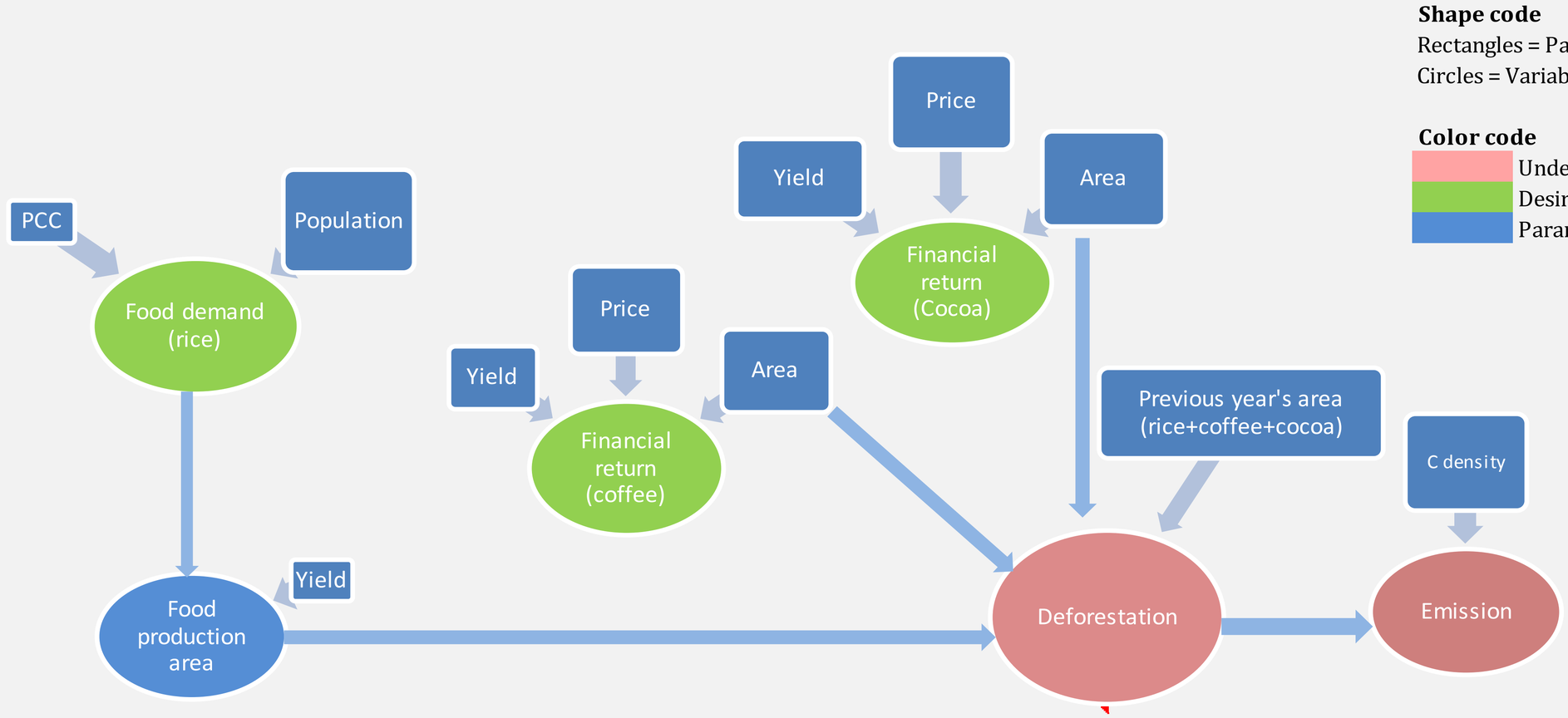
Social



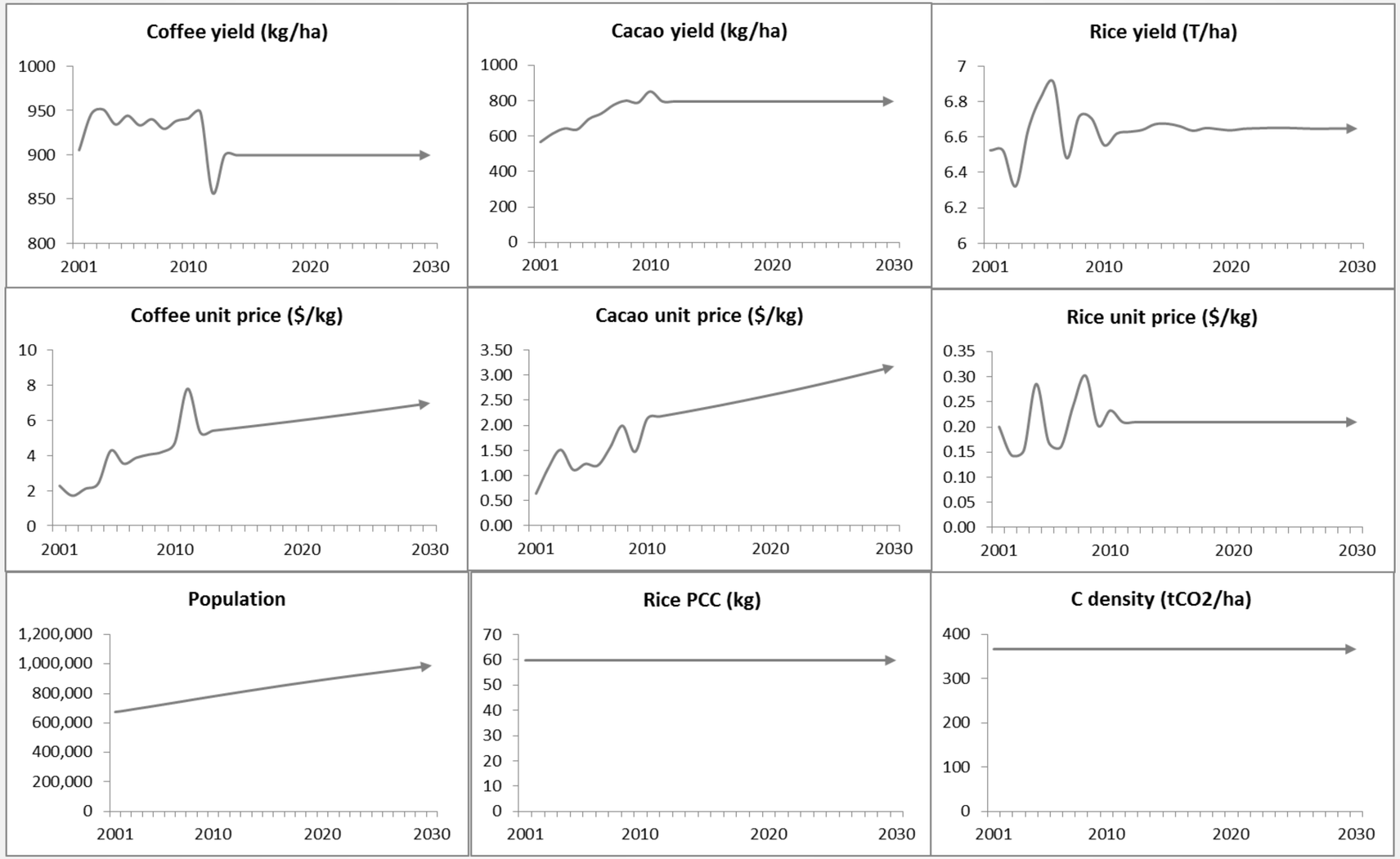




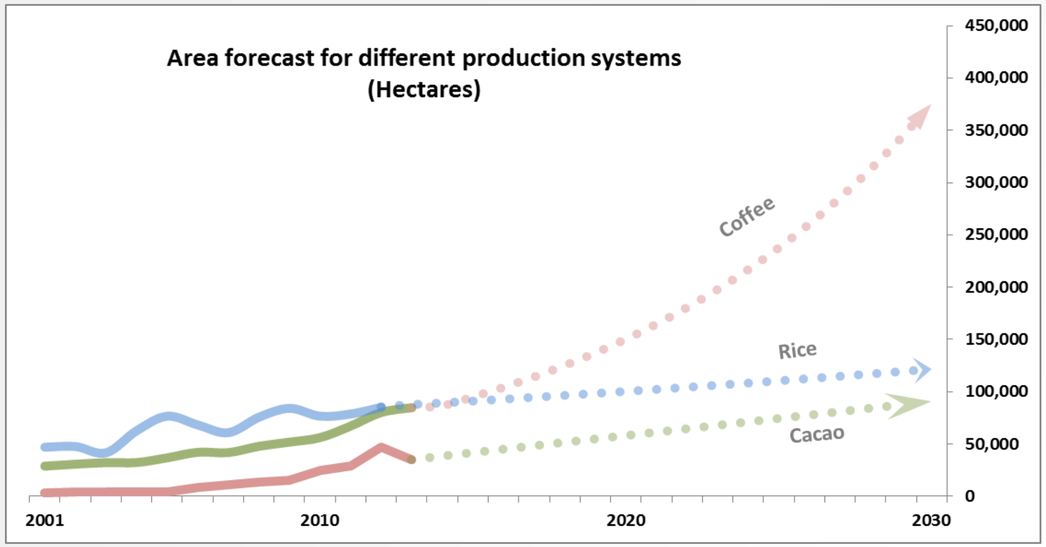
SUSTAINABILITY IN THE FUTURE CONDITIONS

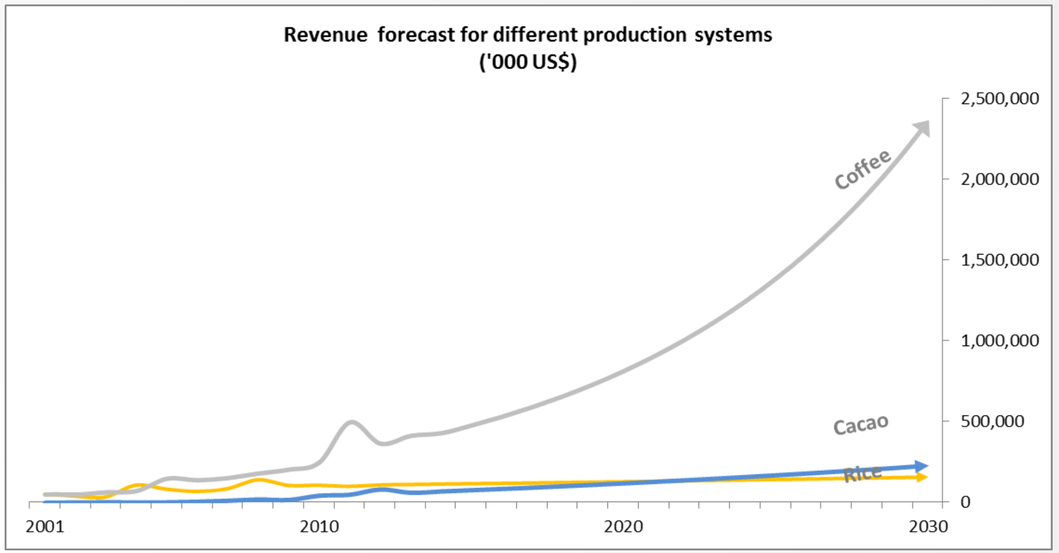


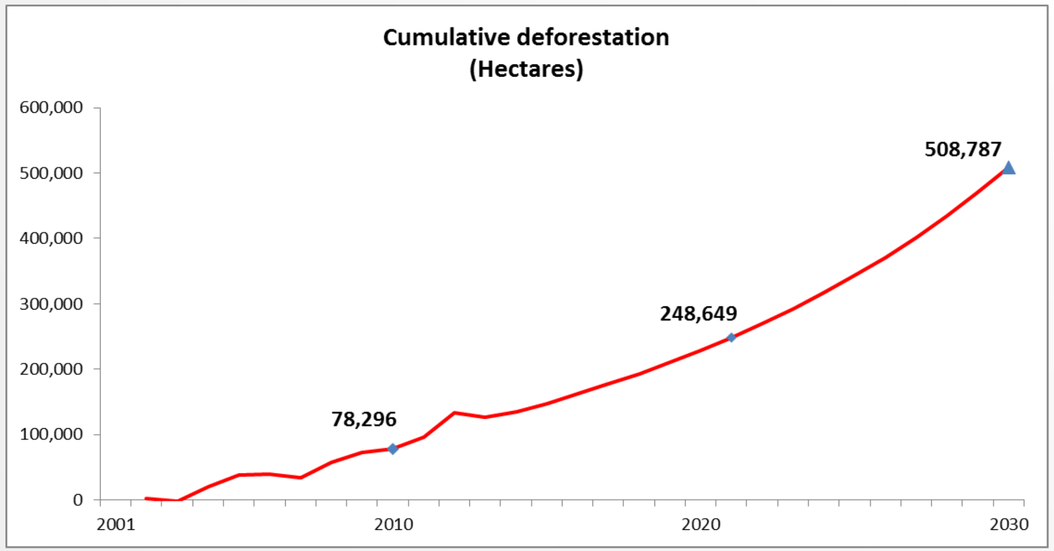
MODEL INPUTS

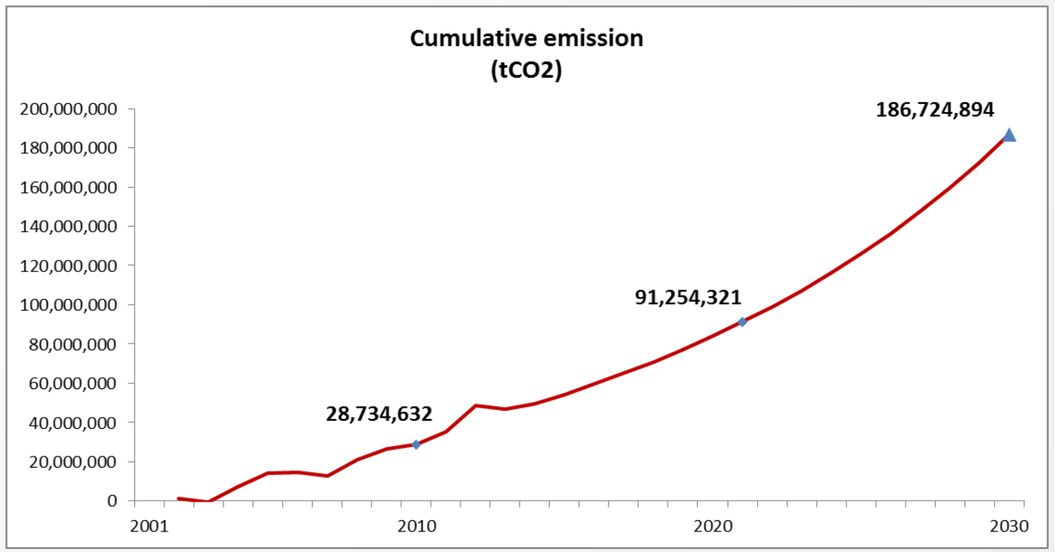


PROJECTIONS (UNCONSTRAINED)

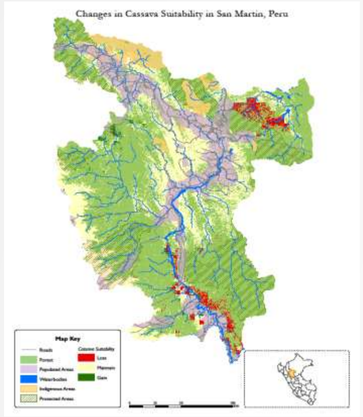




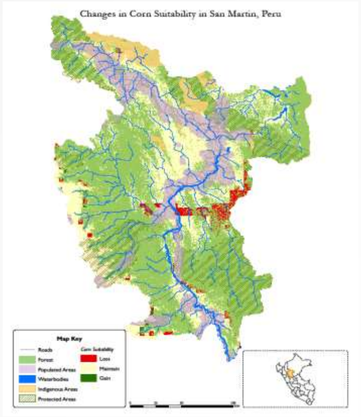




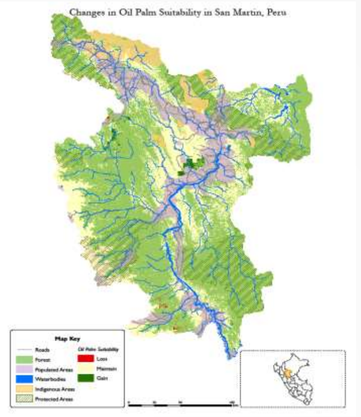
AGRICULTURAL SUITABILITY ANALYSIS



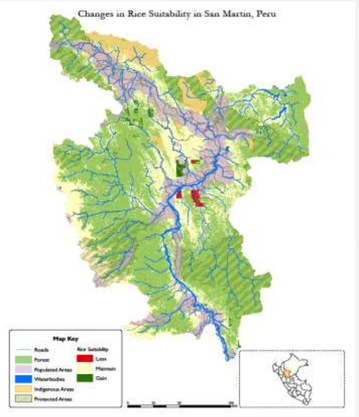
Cassava



Corn



Oil Palm



Rice

- Depending on the crop, areas of expansion in suitability in 2050 will vary 4-19%
- The crops with the highest areas of potential expansion are oil palm, cassava (19%) and rice (18%)
- Corn is projected to expand in only 4% in the future based on areas currently suitable, but can potentially experience a reduction in suitable area of 47%.
- Losses in the area suitable for production of the other 3 crops are smaller, ranging from 2-14%

WHAT INFORMATION IS NEEDED TO SCALE UP INVESTMENT IN SUSTAINABLE LANDSCAPES?

- Investors and commodity sourcing companies

  Is this a good place to invest?

- National and sub-national governments and international development institutions

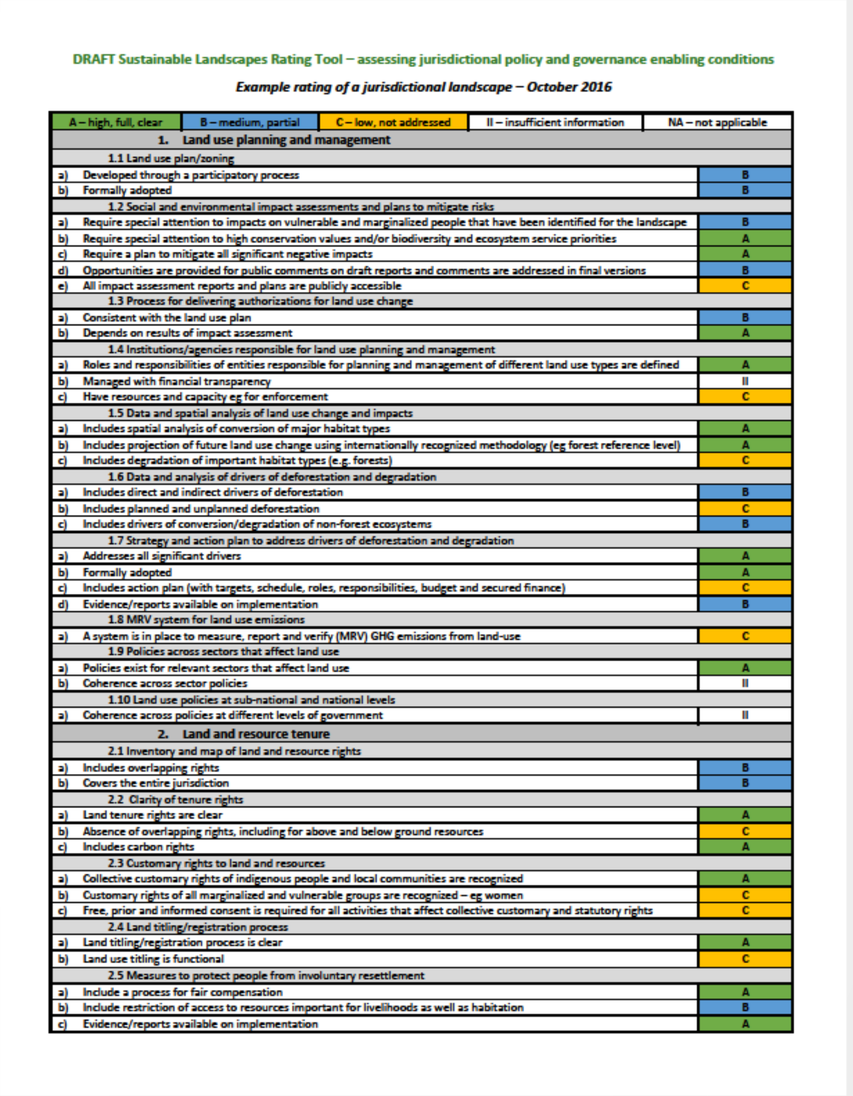
  How to impact green growth and sustainable development?

- Landscape level governments, managers, producers and their partners

  Are we investment ready?

SUSTAINABLE LANDSCAPES "RATING TOOL"

- Structured set of criteria for key policy and governance conditions
- Themes
  - Land use planning and management
  - Land and resource tenure
  - Biodiversity and ecosystem services
  - Stakeholder coordination and participation
  - Commodity supply chains
- Formats
  - Scorecard: summary of rating for each criterion A = high/full/clear, B = medium/partial, C = low/not addressed
  - Assessment: detailed evidence for rating with links to supporting information (laws, reports, data etc.)



DRAFT Sustainable Landscapes Rating Tool – assessing jurisdictional policy and governance enabling conditions

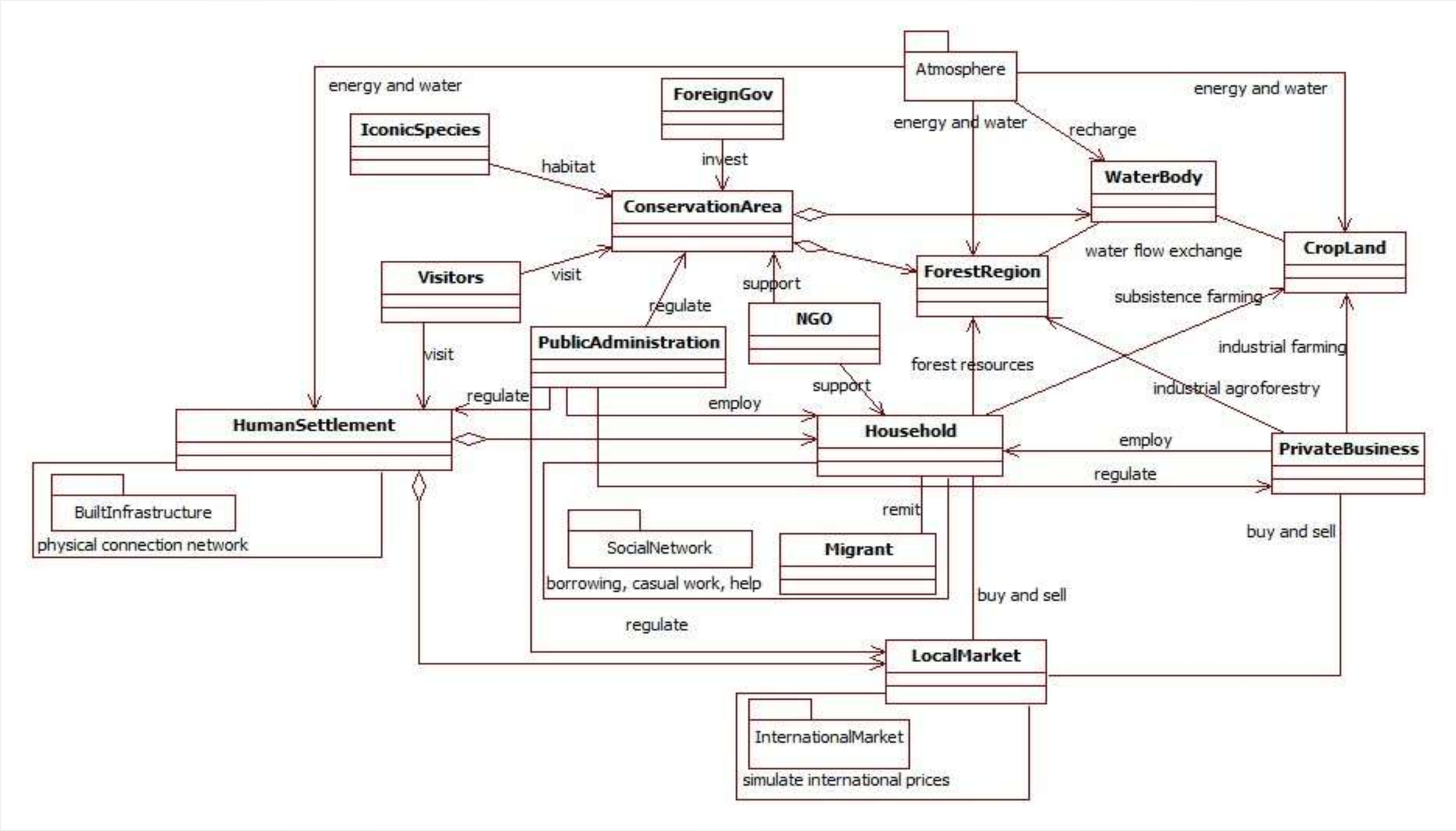
Example rating of a jurisdictional landscape – October 2016

A – high, full, clear	B – medium, partial	C – low, not addressed	II – insufficient information	NA – not applicable

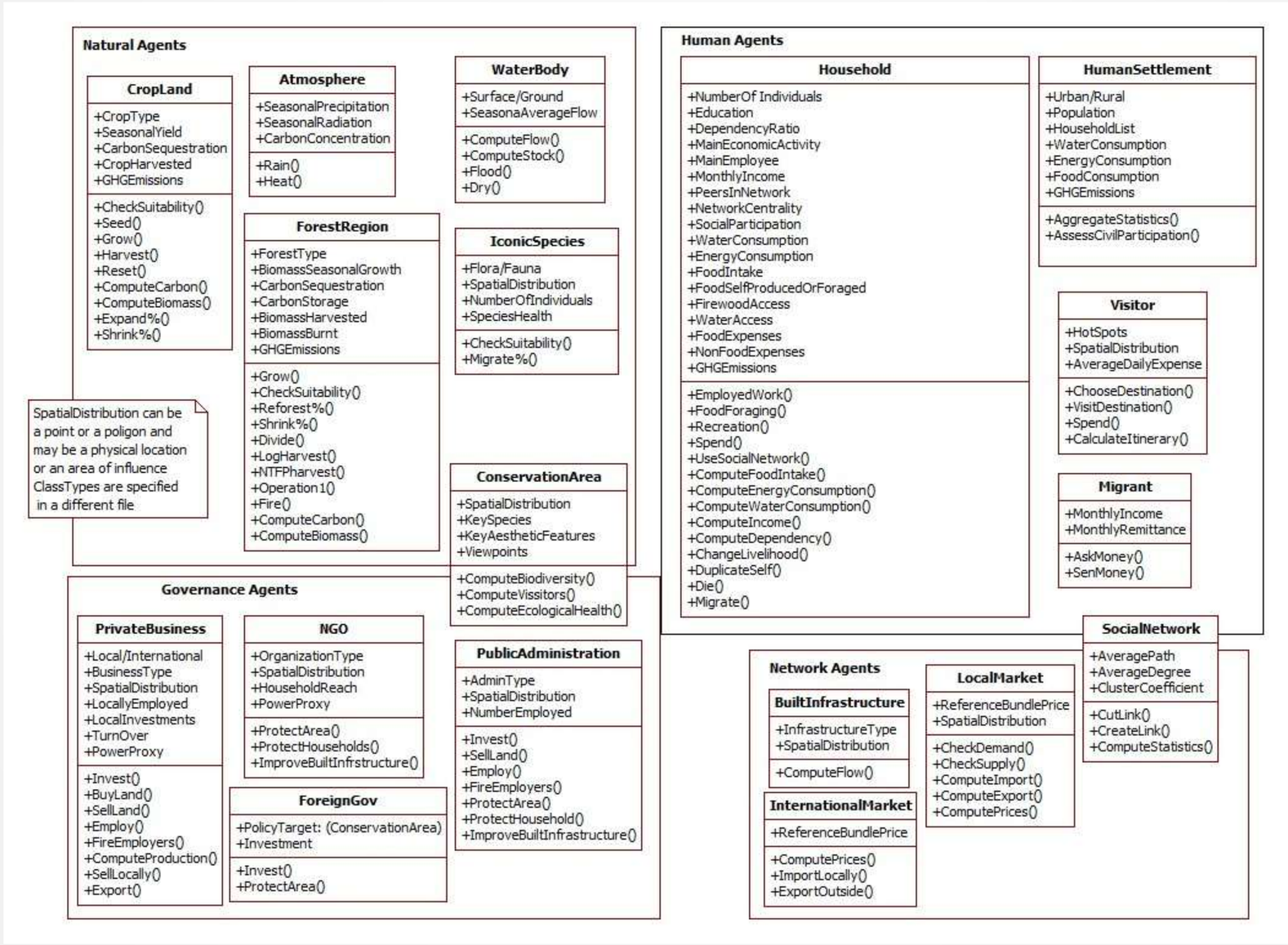
1. Land use planning and management	
1.1 Land use plan/zoning	
a) Developed through a participatory process	B
b) Formally adopted	B
1.2 Social and environmental impact assessments and plans to mitigate risks	
a) Require special attention to impacts on vulnerable and marginalized people that have been identified for the landscape	B
b) Require special attention to high conservation values and/or biodiversity and ecosystem service priorities	A
c) Require a plan to mitigate all significant negative impacts	A
d) Opportunities are provided for public comments on draft reports and comments are addressed in final versions	B
e) All impact assessment reports and plans are publicly accessible	C
1.3 Process for delivering authorizations for land use change	
a) Consistent with the land use plan	B
b) Depends on results of impact assessment	A
1.4 Institutions/agencies responsible for land use planning and management	
a) Roles and responsibilities of entities responsible for planning and management of different land use types are defined	A
b) Managed with financial transparency	II
c) Have resources and capacity eg for enforcement	C
1.5 Data and spatial analysis of land use change and impacts	
a) Includes spatial analysis of conversion of major habitat types	A
b) Includes projection of future land use change using internationally recognized methodology (eg forest reference level)	A
c) Includes degradation of important habitat types (e.g. forests)	C
1.6 Data and analysis of drivers of deforestation and degradation	
a) Includes direct and indirect drivers of deforestation	B
b) Includes planned and unplanned deforestation	C
c) Includes drivers of conversion/degradation of non-forest ecosystems	B
1.7 Strategy and action plan to address drivers of deforestation and degradation	
a) Addresses all significant drivers	A
b) Formally adopted	A
c) Includes action plan (with targets, schedule, roles, responsibilities, budget and secured finance)	C
d) Evidence/reports available on implementation	B
1.8 MRV system for land use emissions	
a) A system is in place to measure, report and verify (MRV) GHG emissions from land-use	C
1.9 Policies across sectors that affect land use	
a) Policies exist for relevant sectors that affect land use	A
b) Coherence across sector policies	II
1.10 Land use policies at sub-national and national levels	
a) Coherence across policies at different levels of government	II
2. Land and resource tenure	
2.1 Inventory and map of land and resource rights	
a) Includes overlapping rights	B
b) Covers the entire jurisdiction	B
2.2 Clarity of tenure rights	
a) Land tenure rights are clear	A
b) Absence of overlapping rights, including for above and below ground resources	C
c) Includes carbon rights	A
2.3 Customary rights to land and resources	
a) Collective customary rights of indigenous people and local communities are recognized	A
b) Customary rights of all marginalized and vulnerable groups are recognized – eg women	C
c) Free, prior and informed consent is required for all activities that affect collective customary and statutory rights	C
2.4 Land titling/registration process	
a) Land titling/registration process is clear	A
b) Land use titling is functional	C
2.5 Measures to protect people from involuntary resettlement	
a) Include a process for fair compensation	A
b) Include restriction of access to resources important for livelihoods as well as habitation	B
c) Evidence/reports available on implementation	A

INTEGRATED ANALYSIS

AGENT-BASED MODELING



AGENTS AND VARIABLES



INDICATORS OF LANDSCAPE SUSTAINABILITY

- Deforestation and fragmentation
- Biodiversity
- Crop production for export and for the region
- Carbon balance
- Food/Water/Energy regional availability and consumption
- Water quantity and quality
- Household Poverty
- Income contribution to national GDP and inequality distribution

CONCLUSIONS

- Landscapes generate a wide range of ecosystem goods and services for different beneficiaries
- But we cannot maximize all the goods and services all at the same time. People make choices on the future they want based on tradeoffs and synergies
- A landscape approach gives an opportunity to understand the teleconnections impacting the landscape
- An integrated model that we proposed here provides a forward-looking framework for understanding landscape scenarios now and into the future