



# A Meta-Analysis of Successful Community Based Payment for Ecosystem Services Programs (PES)

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# Background and Framing of Research

Although establishment of regulatory markets are almost always “top down”, there is evidence that more locally acceptable and successful markets tend to come from the community, from the “bottom up” (Ostrom, Chang, Pennington, & Tarko, 2012).

Literature review documenting bottom up organizing of PES programs able to successfully manage local resources, to discover what effects if any this system may have on the local watershed **And** the local political economy.

## Logical Hypothesis?

For PES markets to be successful, they must be able to assure integrity, or consistent provisioning, of the purchased services;

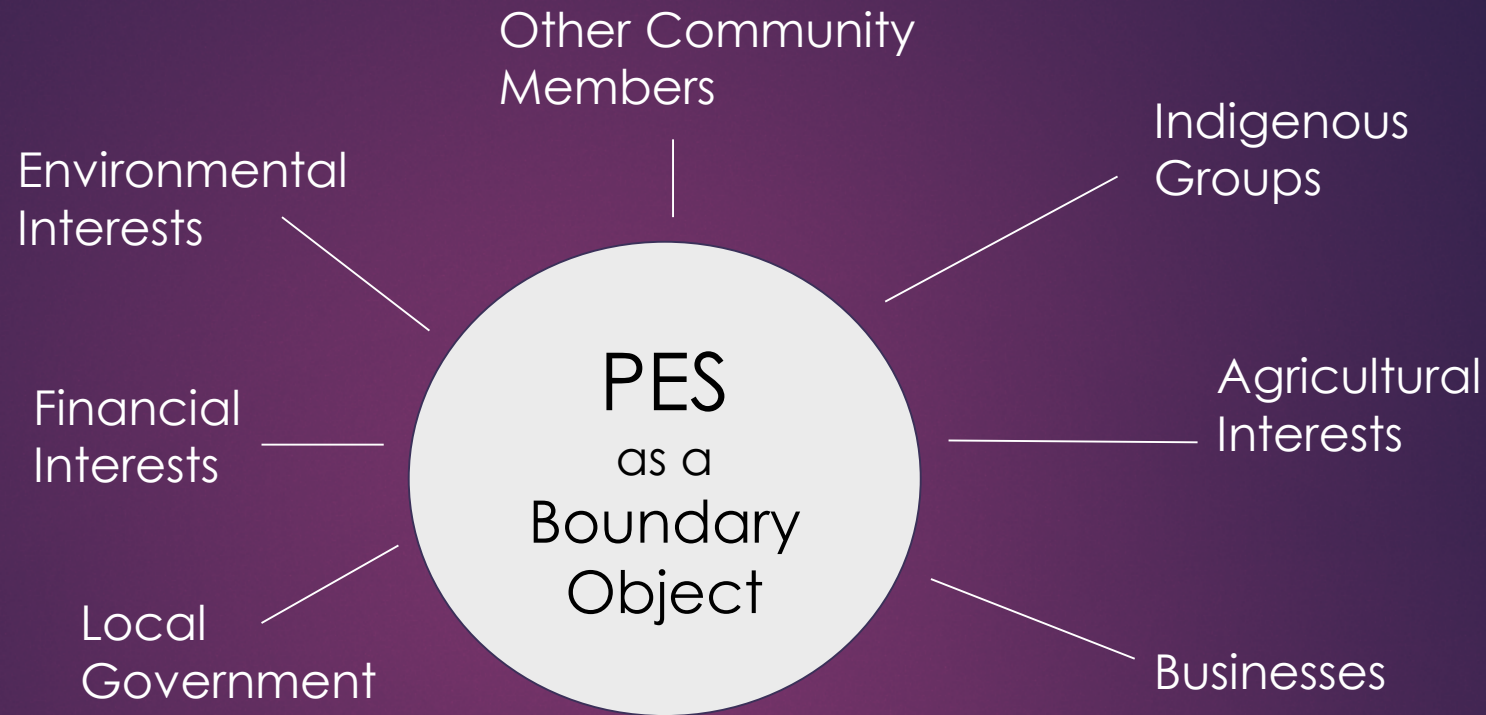
Development of local knowledge and decision making regarding design and operation of this market function contributes to changing social, political, and policymaking dynamics;

This in turn allows for local and sustainable resource use and management to emerge;

Thereby changing the local political economy and local participant's relationship with nature;

These changes may then prove to have transformative social, cultural, economic, and ecological results.

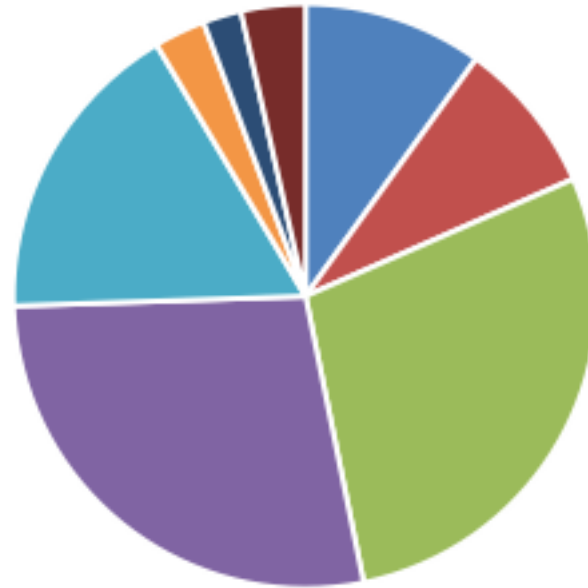
# Undervalued Value of PES



**Boundary Object** - a concept by which different disciplines or perspectives view the same object, process, or other phenomenon but with the lens or meanings of that particular discipline or perspective (Schleyer et al. 2015)

# Case Study Distribution by Country and Region

(454 Cases)



■ Africa

■ Asia

■ Central & South America

■ EU

■ United Kingdom

■ Dominican Republic

■ Mexico

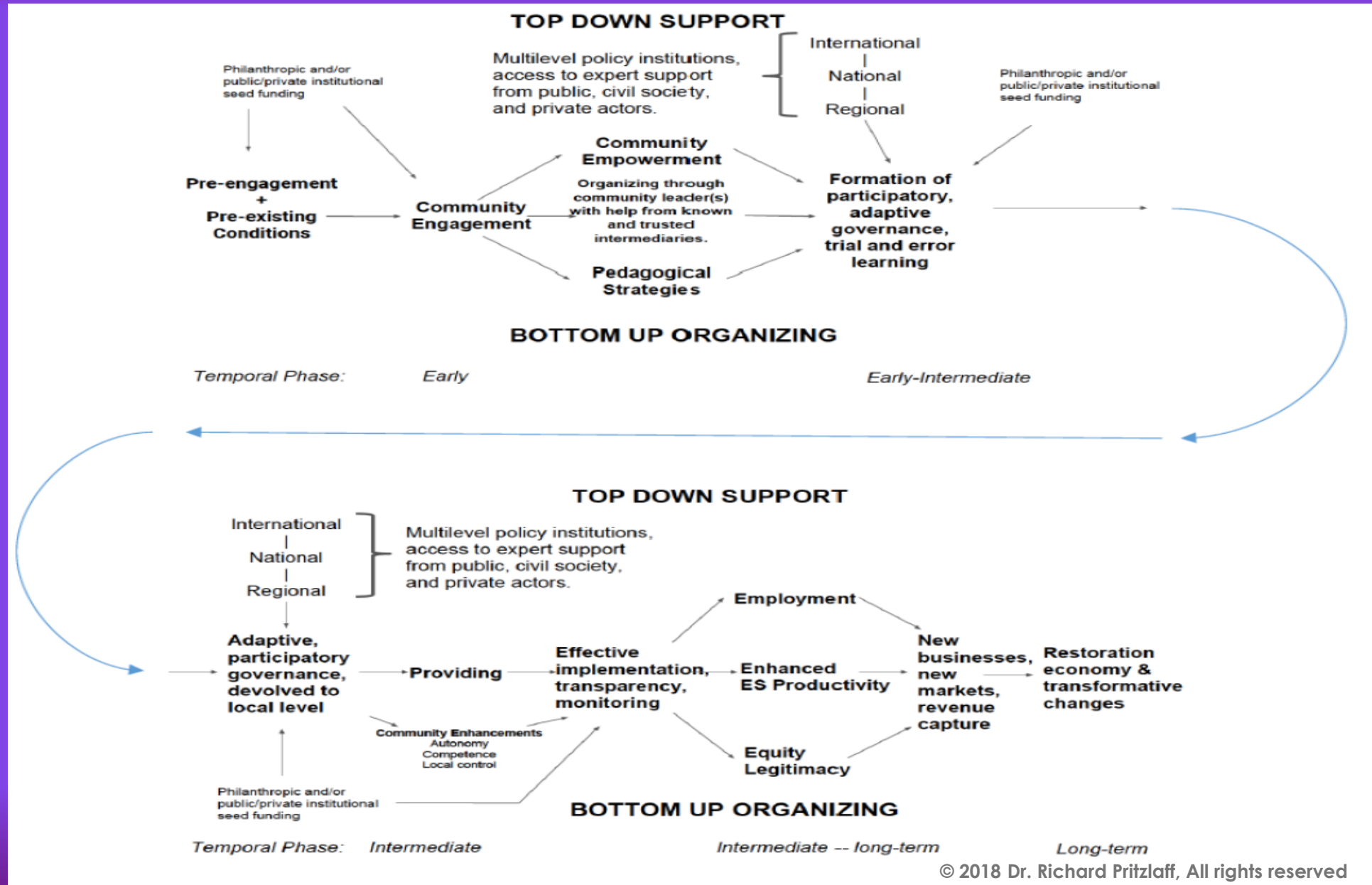
■ China

# Themes of Successful PES Programs

(1065 discreet data points)

- ▶ Pre-engagement and pre-existing conditions
- ▶ Community engagement and empowerment
- ▶ Pedagogical strategies
- ▶ Formation of participatory, adaptive governance, trial-and-error learning
- ▶ Adaptive, participatory governance devolved to the local level, providing effective implementation and monitoring
- ▶ Enhanced ES productivity and employment opportunities
- ▶ New businesses, new markets, and revenue capture

# Causal and Conceptual Chain of Events Creating Successful PES Programs



# 1. Pre-engagement and pre-existing conditions

Through long-term social capital, trust, and relationship building, change agents known to the community who have knowledge of:

- ▶ inter and intragroup variation,
- ▶ local social structures, institutions, organizations and traditions (especially regarding resource management)

are able to convene and engage broad community participation in project planning and decision making, using ES as a boundary object.



## 2. Community engagement and empowerment

Skillfully facilitated dialogue able to:

- ▶ integrate local knowledge and values to gain broad community participation in project planning and decision-making
- ▶ Develop common language to describe resource issues and solutions

Resulting in empowerment for participants and their community.

### 3. Pedagogical strategies

1. Careful selection of spaces and activities to elicit stakeholder tacit and informal knowledge and dialogue;
2. Methods that support transdisciplinary systems thinking allowing stakeholders to disentangle complex problems and build a common framework for creating solutions;
3. Multilevel communication, from local/regional outreach and media to national mass media to garner public, political, and financial support.

## 4. Formation of participatory, adaptive governance, trial-and-error learning

With help and advice from outside experts and project intermediaries:

1. build local governance structure that upholds existing local values and equity through transparency and community participation, while
2. retaining local control and autonomy.
3. Develop processes for experimentation, learning, and self-correction.

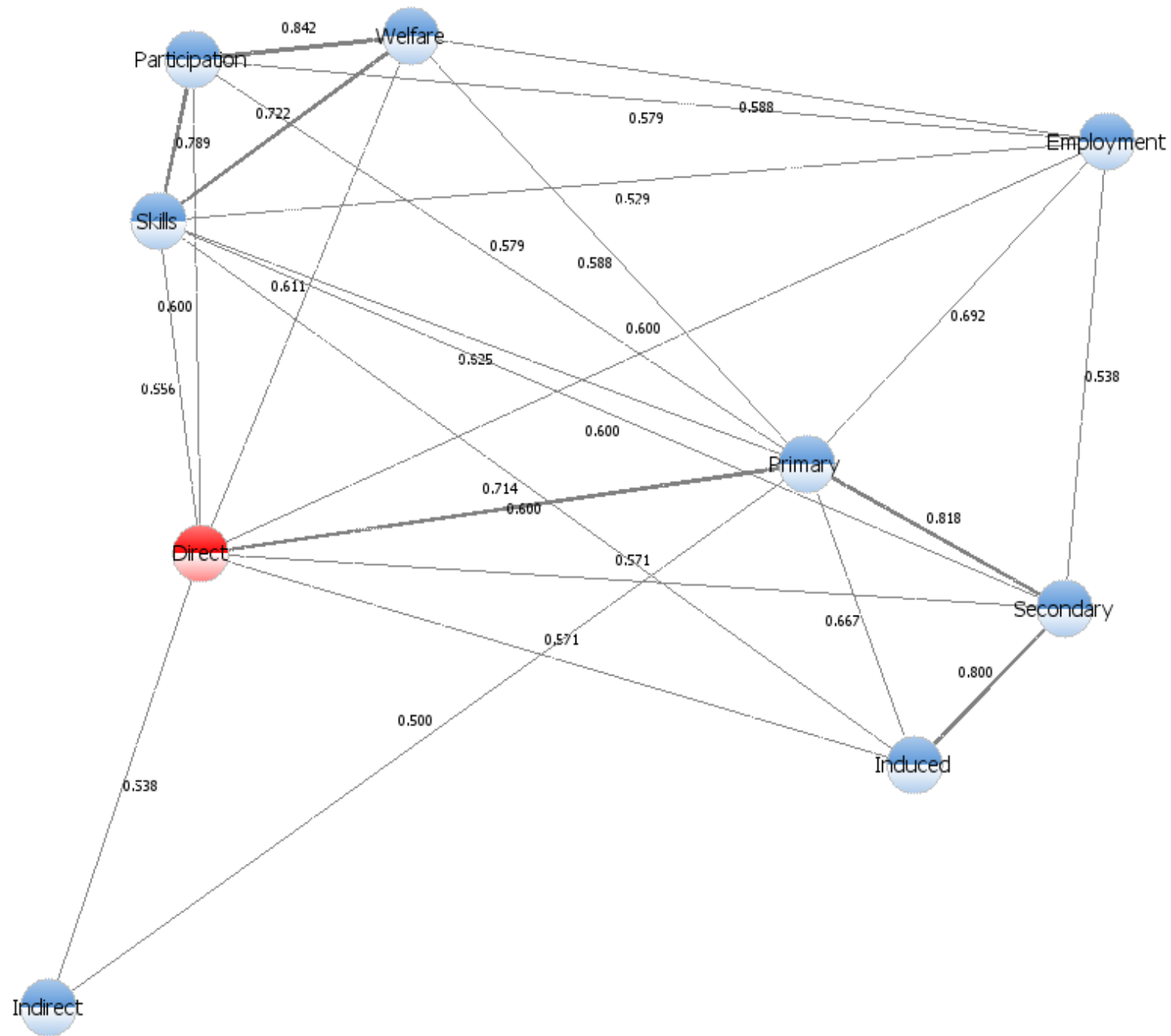
## 5. Adaptive, participatory governance devolved to the local level, providing effective implementation and monitoring

- ▶ Develop multilevel governance (subsidiarity), resulting in closer-to-program decision-making.
- ▶ Monitoring scale and resolution are important to all stakeholders and can help to converge variable interests.
- ▶ Project efficiency and fairness are intertwined

## 6. Enhanced ES productivity and employment opportunities

- ▶ A link exists between enhanced ecosystem services and employment opportunities.
- ▶ ES provision monitoring and verification provide early job opportunities.
- ▶ Correction for market failure to properly value local ES can lead to significantly enhanced business opportunities and local revenue.
- ▶ Third-party intermediaries' help and networks are critical.

Code co-occurrence by probability linkage



## 7. New businesses, new markets, and revenue capture

New skills and capacity increase revenue capture.

This allows for funding of new businesses, local infrastructure, and other community development, diversifying revenue streams, and more opportunity.

# Best Practices Based on Cross Case Analysis

- **Scale: Local To Regional**
- **Time Frame: 10 To 30 Years**
- **Actors Involved**
- **Trust Building**
- **Community Capacity Building**
- **Communication**
- **Economic:**
  - (1) **Financial Capital**
  - (2) **Non-financial Capital**
- **Transformed Local Political Economy**





# Thank You!

[https://www.researchgate.net/publication/325945217\\_a\\_meta-analysis\\_of\\_successful\\_community\\_based\\_payment\\_for\\_ecosystem\\_services\\_programs](https://www.researchgate.net/publication/325945217_a_meta-analysis_of_successful_community_based_payment_for_ecosystem_services_programs)

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# Research Questions

1. What are the changes in community members' relationships in terms of:

acquired skills

related employment

Change in participation in or acceptance of the PES scheme

Change in perception of personal and/or community welfare, voting, and other indications of social change?;

2. Are there primary, secondary, and induced changes in the local economy, and if so, what are they?;

3. What are the direct and indirect (or intangible) ecological benefits to the local watershed, if any?

# Methodology

682 articles reviewed to at least the abstract level

Providing 84 articles for careful review

20 primary articles describing 454 case studies

Coded using CAQDAS (QDA miner)

First cycle coding: initial and holistic

Second cycle coding: pattern coding ([saldana 2016](#))

Resulting in 1065 discreet data points

## Best Practices Based on Cross Case Analysis

- **SCALE: LOCAL TO REGIONAL**

LARGER SCALE IMPLIES INVOLVEMENT OF MORE STAKEHOLDERS, MAKING PROGRAM DESIGN AND PROGRESS DIFFICULT, RISKIER, AND COSTLY.

- **TIME FRAME: 10 TO 30 YEARS**

- **ACTORS INVOLVED:**

EFFECTIVE FACILITATION AND COMMUNITY ORGANIZING BY KNOWN LEADERS OR INTERMEDIARIES ACCESSING OUTSIDE NETWORKS ABLE TO SUPPLY SEED FUNDING, SUPPORT KNOWLEDGE TRANSFER AND LEARNING; RESULTING IN: ADAPTIVE GOVERNANCE, ADAPTIVE MANAGEMENT, LONG TERM REVENUE CAPTURE, STABLE FINANCE.

- **TRUST BUILDING**

EARLY STAKEHOLDER PARTICIPATION AND SYNTHESIS OF STAKEHOLDER KNOWLEDGE; DECISION-MAKING TRANSPARENCY; MULTILEVEL AND CROSS-INSTITUTIONAL CONNECTIONS THAT MAKE SCIENTIFIC AND OTHER KNOWLEDGE AVAILABLE; TECHNICAL ADVICE, SEED FUNDING, AND CAPACITY-BUILDING SUPPORT, WHILE RETAINING LOCAL DECISION-MAKING AND GOVERNANCE AUTONOMY.

- **COMMUNITY CAPACITY BUILDING**

PHYSICAL AND SOCIAL SPACES FOR COLLABORATIVE MULTILoop LEARNING; EXPERIMENTAL APPROACH TO PROGRAM DESIGN, "LEARNING BY DOING"; TRAINING COMMUNITY MEMBERS TO MONITOR, ASSESS, AND ADAPT PRACTICES SECURING LONG-TERM HIGH-QUALITY ES PROVISIONING; ENHANCING EXISTING OR BUILDING A CULTURE OF CONSERVATION.

- **COMMUNICATION**

MAKING EARLY SUCCESSES AND BENEFITS VISIBLE TO STAKEHOLDERS DRIVES INTERNAL AND EXTERNAL PROJECT MOTIVATION, LEGITIMACY, AND SUPPORT; COMMUNICATION OF PROJECT OUTCOMES CREATES GREATER REPLICATION REGIONALLY, SCALING RESOURCE MANAGEMENT THROUGH COORDINATION WITH ADJACENT COMMUNITIES, AND STIMULATES TRANSFORMATION OF UNDERLYING INSTITUTIONAL AND REGULATORY FRAMEWORKS STUCK IN CONVENTIONAL PARADIGMS.

- **ECONOMIC: (1) FINANCIAL CAPITAL**, DIRECT PAYMENTS, EMPLOYMENT, MORE EFFICIENT AGRICULTURE, NEW BUSINESSES & MARKETS; **(2) NON-FINANCIAL CAPITAL**, IN-KIND OR PES REVENUE FUNDED INFRASTRUCTURE AND COMMUNITY PROJECTS; SOCIAL CAPITAL THROUGH COLLECTIVE ACTION, PERCEIVED EQUITY, AND ENHANCED OPPORTUNITY; STRENGTHENING OF COMMUNITY ORGANIZATIONS; POLITICAL CAPITAL THROUGH INCREASED LAND TENURE SECURITY; INCREASED COMMUNITY VALUATION AND KNOWLEDGE OF SUSTAINABLE RESOURCE MANAGEMENT.

- **TRANSFORMED LOCAL POLITICAL ECONOMY**

CHANGED SOCIAL AND CULTURAL NORMS, E.G. REAL AND PERCEIVED COMMUNITY EQUITY; ENHANCED LOCAL KNOWLEDGE, CAPACITIES, ECONOMIC OPPORTUNITIES, LIVELIHOODS, AND CONFIDENCE; NEW BUSINESS MANAGEMENT AND MARKETING CAPABILITIES ABLE TO INCREASE REVENUES AND REVENUE CAPTURE; REDUCED ELITE CAPTURE POTENTIAL; ACCESS AND VOICE TO POLICY-MAKERS REGIONALLY & INTERNATIONALLY FROM COMMUNICATION OF PROJECT SOCIAL-ECONOMIC AND LIVELIHOOD BENEFITS.

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CATEGORY: TOP DOWN

CODE: DETRACTION: *ELEMENT DETRACTING FROM SUCCESS*

ENHANCEMENT: *ELEMENT ENHANCING SUCCESS*

CATEGORY: BOTTOM UP

CODE: DETRACT: *ELEMENT DETRACTING FROM SUCCESS*

SUB CODE: -SOCIAL/CULTURAL

-ECOLOGIC

-ECONOMIC

-POLITICAL

CODE: ENHANCED *ELEMENT ENHANCING SUCCESS*

SUB CODE: PATAGONIA: *THEMES AND PATTERNS RELEVANT TO PATAGONIA*

SUB CODE: SOCIAL/CULTURAL: *DOCUMENTED CHANGES IN:*

SUB CODE: PARTICIPATION: *PERCEPTION OF SCHEME: FACTORS FOR PARTICIPATION, ACCEPTANCE/LEGITIMACY, SUPPORT FOR RULES AND SANCTIONS*

SUB CODE: WELFARE: *PERSONAL OR COMMUNITY*

ECONOMY: *DOCUMENTED CHANGES IN:*

SUB CODE: PRIMARY

SECONDARY

INDUCED

SUB CODE: LOCAL WATERSHED: *DOCUMENTED CHANGES IN*

SUB CODE: DIRECT

INDIRECT

CATEGORY: STATEMENTS: *RELEVANT OTHER DATA*

SUB CODE: PES

LAND RIGHTS

GENERAL

GOVERNANCE

Theme	Description	Examples
Pre-engagement and pre-existing conditions	Through long-term social capital, trust, and relationship building, appropriate change agents acquire knowledge of inter and intragroup variation, local social structures, institutions, organizations and traditions (especially regarding resource management)	(1) Known, trusted, charismatic leaders; (2) church, water councils, service organizations; (3) indigenous traditions e.g., "mingas."
Community engagement and empowerment	Accounting for existing social contexts, use skillfully facilitated dialogue to integrate local knowledge and values to gain broad community participation in project planning and decision-making ; Develop common language to describe resource issues and solutions; Process is empowering for participants and community .	(1) Visioning workshops, field explorations; (2) commonly understood definitions etc.; (3) energizing solutions and achievable projects.
Pedagogical strategies	Careful selection of spaces and activities to elicit stakeholder tacit and informal knowledge and dialogue; Methods that support transdisciplinary systems thinking allowing stakeholders to disentangle complex problems and build a common framework for creating solutions; Multilevel communication, from local/regional outreach and media to national mass media to garner public, political, and financial support.	(1) Roundtables, field trips, maps, cartoons; (2) ES as a boundary object, scenario planning; (3) local and national PR, conferences, social media.
Formation of participatory, adaptive governance, trial-and-error learning	Build local governance upholding existing local values and equity through transparency and community participation, with help and advice from outside experts and project intermediaries, while retaining local control and autonomy. Develop processes for experimentation, learning, and self-correction.	(1) Open community-wide planning/reporting forums; (2) finance, academic, organizational, governance; (3) single and double-loop learning.
Adaptive, participatory governance devolved to the local level, providing effective implementation and monitoring	Develop multilevel governance, subsidiarity, and closer-to-program mutual decision-making. Availability of information is key for stakeholders opting into the program. Monitoring scale and resolution are important to all stakeholders and can help to converge variable interests. Project efficiency and fairness are intertwined, and social-cultural context matters for success, as do financial and temporal considerations.	(1) Establish/strengthen links to (regional, national, international) public and private actors who can add additional support (financial, technical, political etc.); (2) field level inspections by trained and trusted local program staff; (3) both program equity and additionality matter, as do simple early project successes.
Enhanced ES productivity and employment opportunities	Link between enhanced ES and employment opportunities. Success can snowball. ES provisioning monitoring and verification provide early job opportunities. Correction for market failure to properly value local ES can lead to significantly enhanced business opportunities and local revenue. Third-party intermediaries' help and networks are critical.	(1) Demonstrate new employment from enhanced ES and program integrity through local employment; (2) new revenue sources from monetized additional ES value; (3) organizational capacity building, finance, and new markets.
New businesses, new markets, and revenue capture	New skills and capacity can increase revenue capture (1). This allows for funding of new businesses, local infrastructure, and other community development (2), diversifying revenue streams, and more opportunity (3).	(1) Understanding markets, consumer preferences, finance etc.; (2) share of revenue to community funds for schools, sanitation, roads, materials etc.; (3) training and new businesses adding to local employment and livelihoods.