

# AGRICULTURE: In Search of Viable Knowledge Systems

An Anthropologist's View of 3 Issues on Western Agricultural Science vs. Indigenous Science

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# INTRODUCTION

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## **Broad intention**

- To provoke thinking (out of the box!) about 3 issues related to agriculture as a knowledge system (western science) in search of the “other” knowledge system (indigenous knowledge)



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## ○ **3 ISSUES**


- **the privileged position of western agricultural science in the world** (*TOP OF THE WORLD*);
- **the significance of indigenous knowledge** (*KILLING ME SOFTLY*); and
- **the interfacing of these two knowledge systems** (*IF WE HOLD ON TOGETHER*).




# Definitions: clarification, confusion

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- WHY are definitions an issue?
  - What do definitions provide?
    - Meaning
    - Clarity
    - Exactness
  - Who is defining? The state vs. non-state.
    - Dominant vs. marginal voices
    - Agent/agency crafting dominant definition is powerful because language constructs reality. Mainstreaming – ability to stabilize and homogenize views within a society. Agent/agency promotes a view of social reality. But, multiple realities of plural publics.

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- Terms defined differently by various interest groups (stakeholders): examples
    - Forest – “*tanan-tanan*” vs “*vast area of land dominated by trees*”; implications for “*DE-FORESTATION*” AND “*RE-FORESTATION*”
    - Indigenous – traditional, local, original? Indigenized? Self-ascription, ascription by others (agencies)
    - Knowledge vs practices – Gaps and reasons for gap: we don’t practice what we know, we don’t know what we practice; implications for IKSP
    - “Tree”, “ownership”, “land”


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- **Viable** –(of a fetus) having reached such a stage of development as to permit continued existence, under normal conditions, outside the womb
  - **Knowledge** –n. acquaintance, familiarity, conversance with facts, truths, principles, or particular branch of learning gained by sight, experience or report (syn. Info, understanding, wisdom, **science**, lore)
  - **Agriculture** –n. husbandry (mgt of resources/domestic affairs!)



# PRIVILEGED KNOWLEDGE: Western Science at Top of the World

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- Many paths to knowledge (knowing): authority, tradition, common sense, logic, intuition, revelation, science
- In any particular culture and in any specific time, some ways are **PRIVILEGED** –knowledge gained in one way is seen as more valid
- In our society, science is privileged because powerful people accept science as the most valid way of knowing.



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*"Is the finding or claim grounded in science, or merely clothed in the 'guise' of science? Is the claim being made backed by research? Who conducted it? Who paid for it? How was it done – what sort of methods and sampling techniques were used? How were the results interpreted? These are the sorts of questions that must be asked to distinguish good science from what has come to be called 'junk' or 'pseudo' science.."* McIntyre 2005:9



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- Different kinds of science (paradigms)
    - Positivist -most dominant (empirical/analytical/nomothetic)
    - Interpretive (hermeneutic/constructivist)
    - Critical (liberatory/transformational)
  - Each paradigm has its own set of assumptions about reality, human beings, the role of common sense, the place of values, etc.



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○ Paradigms = Worldviews = Ideologies  
Worldview as ideology functions:

- Explanatory (explains complex or puzzling phenomena; e.g., biodiversity, species extinction)
- Orientative (gives group identity, sense of belonging)
- Evaluative (gives standards for judging what is right, what is ethical, what is beautiful, etc.)
- Programmatic (defines what is to be done and who is to do it).



# INDIGENOUS KNOWLEDGE Softly Being Killed


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## SCIENTIFIC KNOWLEDGE

- Secular
- Written
- Reductionist- based on subsets of the whole
- Rapid acquisition
- Based on experimentation and systematic, deliberate accumulation of facts
- Data generated by specialized researchers

## INDIGENOUS KNOWLEDGE

- Sacred and secular
- Oral or visual
- Holistic –based on whole systems
- Lengthy acquisition
- Based on personal observation, trial & error, & synthesis of facts
- Data generated by resource users



# False dichotomy: science versus indigenous knowledge

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- Today, indigenous knowledge is romanticized. Everyone is in love with IK.
- International agreements formulated in 1992 Earth Summit (Rio Declaration of Principles, Agenda 21, Convention on Biological Diversity, and Statement of Forest Principles) contain 3 aspects:
  - Recognition that the unique knowledge of IPs, which defines their crucial role in sustainable development
  - Prescriptions to states to support and promote this unique knowledge, including identity, culture and interests
  - Prescriptions to states to guarantee effective participation of indigenous people.




# Key ideas involving IPs in Earth Summit


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- That the recognition of traditional knowledge of IPs is relevant & useful in the management of natural resources & in the pursuit of sustainable development
- That this knowledge should be interfaced with the current natural resources management, as appropriate
- That IPs should actively participate in decision-making, particularly with regards to lands, waters, & resources in which they have a traditional bond and interest.



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- Food security issues not new, but basic concern throughout human prehistory and history. Food – central focus around which economies, religions, social organizations including the military, & other cultural features have been woven
  - 90-99% of the 2-5 million years of human existence: hunted, fished and gathered food from nature in sustainable way
  - Agriculture: recent phenomenon; Neolithic period (10,000 years ago)= Neolithic Revolution; mechanized agric (only a century ago, with invention of internal combustion engines & emergence of oil industry)

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- Anthropologists define food-getting activities as central considerations in classifying & analyzing cultures (food is most essential in human survival!)
  - Cultures = adaptive or subsistence strategies (to meet human NEEDS).
  - E.g., Cohen (1974): typology of cultures based on correlations between economies & social characteristics. 6 adaptive strategies:
    - Foraging
    - Horticulture
    - **Agriculture**
    - Pastoralism
    - Merchantilism
    - Industrialism

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- FOOD COLLECTION – subsistence strategy by which food is obtained from naturally occurring resources, i.e., wild plants & animals.
  - In general, even if foragers live in different ecosystems & employ different techniques for hunting and gathering food, they share particular cultural features (Table 1).






# Table 1. General features of food collectors

Adapted from Ember, Ember & Peregrine 2002:272

POPULATION DENSITY	Lowest
MAXIMUM COMMUNITY SIZE	Small
NOMADISM/PERMANENCE OF SETTLEMENT	Generally nomadic or semi-nomadic
<b>FOOD SHORTAGES</b>	<b><u>Infrequent</u></b>
TRADE	Minimal
FULL-TIME CRAFT SPECIALISTS	None
INDIVIDUAL DIFFERENCES IN WEALTH	Generally none
POLITICAL LEADERSHIP	Informal

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- Table 2 lists general features of 2 kinds of food producers: **horticulturists** and **intensive agriculturists**. [I have excluded pastoralists.]
  - With domestication of plants & animals, food producers could control natural processes such as breeding and seeding.
  - Horticulturists –people who grow a variety of crops using relatively simple tools like hoe & dibble stick. Shifting cultivator grows crops on land that is periodically fallowed (rested) for long periods. Mix crop cultivation with hunting & fishing =produce more food than foragers, and can support more people




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- Intensive agriculturists cultivate permanent fields with the use of complex technologies such as soil enhancement technologies & irrigation, employing plows or mechanized equipment.

# Table 2. General features of food

**producers** Adapted from Ember, Ember & Peregrine 2002:272

	HORTICULTURISTS	INTENSIVE AGRICULTURISTS
POPULATION DENSITY	Low-moderate	Highest
MAXIMUM COMMUNITY SIZE	Small-moderate	Large (towns and cities)
NOMADISM/ PERMANENCE	More sedentary; communities may move	Permanent communities
<b>FOOD SHORTAGES</b>	<b><u>Infrequent</u></b>	<b><u>Frequent</u></b>
TRADE	Minimal	Very important
FULL-TIME CRAFT SPECIALISTS	None or few	Many (high degree of craft specialization)
INDIVIDUAL WEALTH DIFFERENCES	Generally minimal	Considerable
POLITICAL LEADERSHIP	Some part-time political officials	Many full-time political officials

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- Specific examples of IKSP already in literature; some unpublished thesis, reports. Many more undocumented.
  - For example, Prill-Brett (1997) paper on IKS in the Cordillera includes:
    - The community as a political unit; leadership
    - Concepts of land tenure; tree tenure, water rights
    - Role of ancestors in CRM
    - NR conflict management
- Dolinen's (1997) Ikalahan indigenous technologies for production and soil and water conservation: *INUM-AN* (swidden), *GEN-GEN* (terracing & composting), *KINEBBAH* (fallow), etc. She also notes indigenous practices for community unity, and for wildlife conservation.




# Secret of sustainability of IP management of natural resources

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- NR management is part of IP culture. Reasons/purposes of forest management go beyond income and livelihood= LIFE; needs are not just material (food, clothing and shelter). Sustainability of forest = sustainability of IP culture. Genocide, ethnocide can occur.
- Lowlanders carry with them their lowland cultural system (humans are culture bearers). Then they migrate to an environment that is different from their original one. Culture-environment interactions are vastly different.



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- The more an individual is involved in an activity, the more she identifies herself with its outcome. Sense of ownership. Participation leads to sustainability. Participation is internally motivated. Authority is not human (e.g., DA) but supernatural (ancestors, spirits, gods).

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- Example: Tausug studied by Kaing (1994). Our interpretation: sustainability of indigenous Tausug agroforestry systems is ensured by their cultural morality. Central principles:
    - Inseparability of religious & secular domains
    - Pervasive concept of shame (*sipug*)
    - Built-in concern for social equity
    - Traditional respect for the environment
    - Wide recognition & acceptance of local leaders






# Can (should) Western Science and IK Hold On Together?

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- Is IK applicable elsewhere? but cultural context is different. Caution against fragmented view. Local capacities, organizations and processes may not be appropriate. Meanings and motivations are different. Cultural lag.
- Sometimes IPs do not apply their own IK anymore. Why? External constraints and influences, such as market economy, “modern” ideas and technologies.  
Collapse of IP cultures

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- BEST WAY: cross-cultural visits, farmer-to-farmer learning; Let people decide what, how, why they want to apply among IK. Self-determination. Outsiders such as DA are facilitators only but not decisionmakers = no “technology transfer” paradigm.
  - Instead of “projects”, MISSIONS guided by vision, implemented with commitment



# Conclusion

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- Western agricultural science has always been linked to IK –medicinal plants, food, etc. =conservation of tropical forests. Issue of intellectual property rights.
- Is IK also searching for western agricultural science? Different views important.
- Basic knowledge and skills necessary for us. Good intentions are never enough!



A warm day to all of you!

Maraming salamat po!