



Markets, fruit diversity and livelihoods

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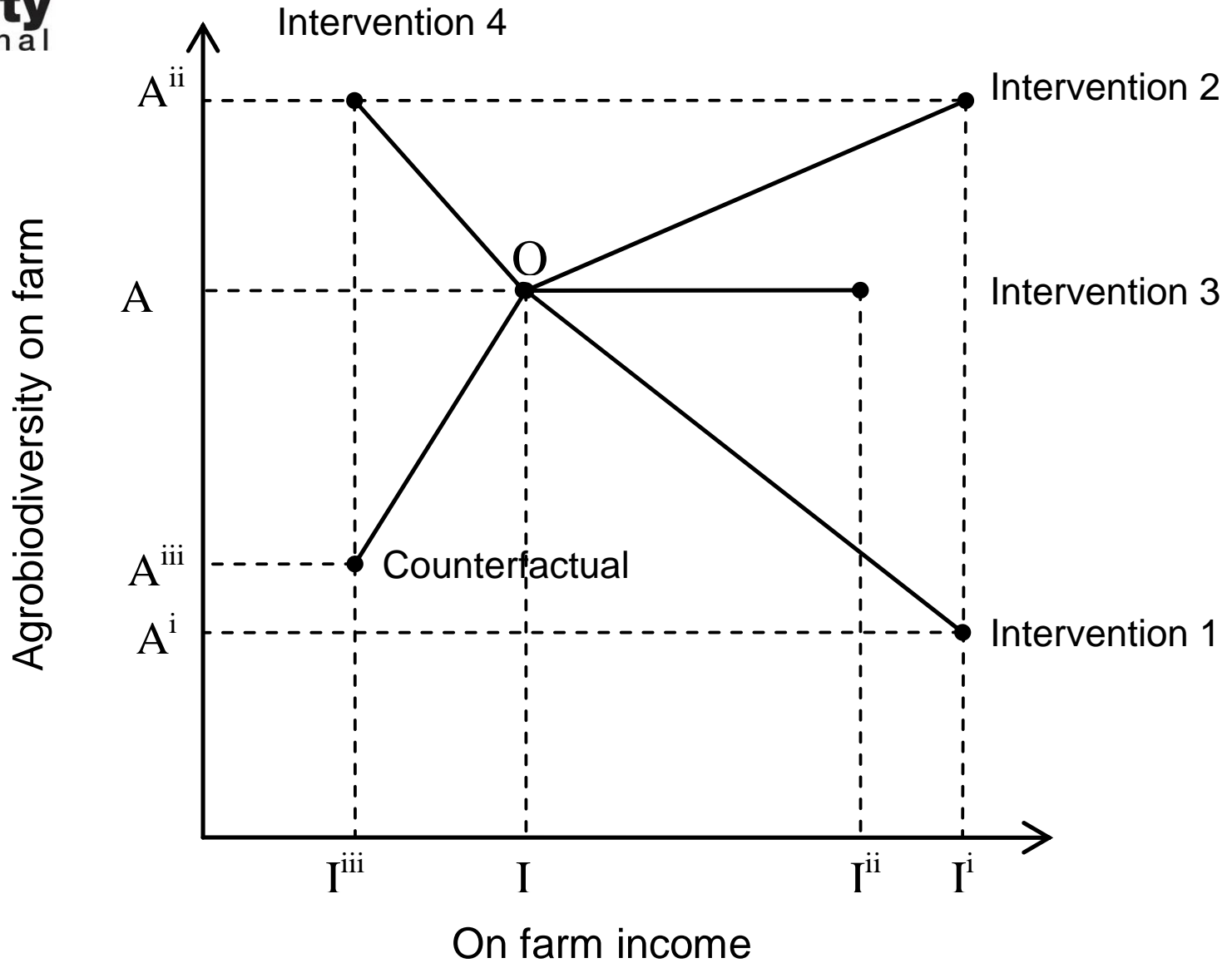
Photos:
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Introduction

- The well-being of the growing world population depends on the availability of biodiversity.
- More integrated and complementary approaches to conserve biodiversity used
- Marketing of products with agrobiodiversity traits to give farmers incentives to maintain diversity on farm
- More understanding needed of trade-off
- Conceptual framework to assess markets for diversity developed
- Case examples of tropical fruits.

Framework



Citrus in India

Successful case:

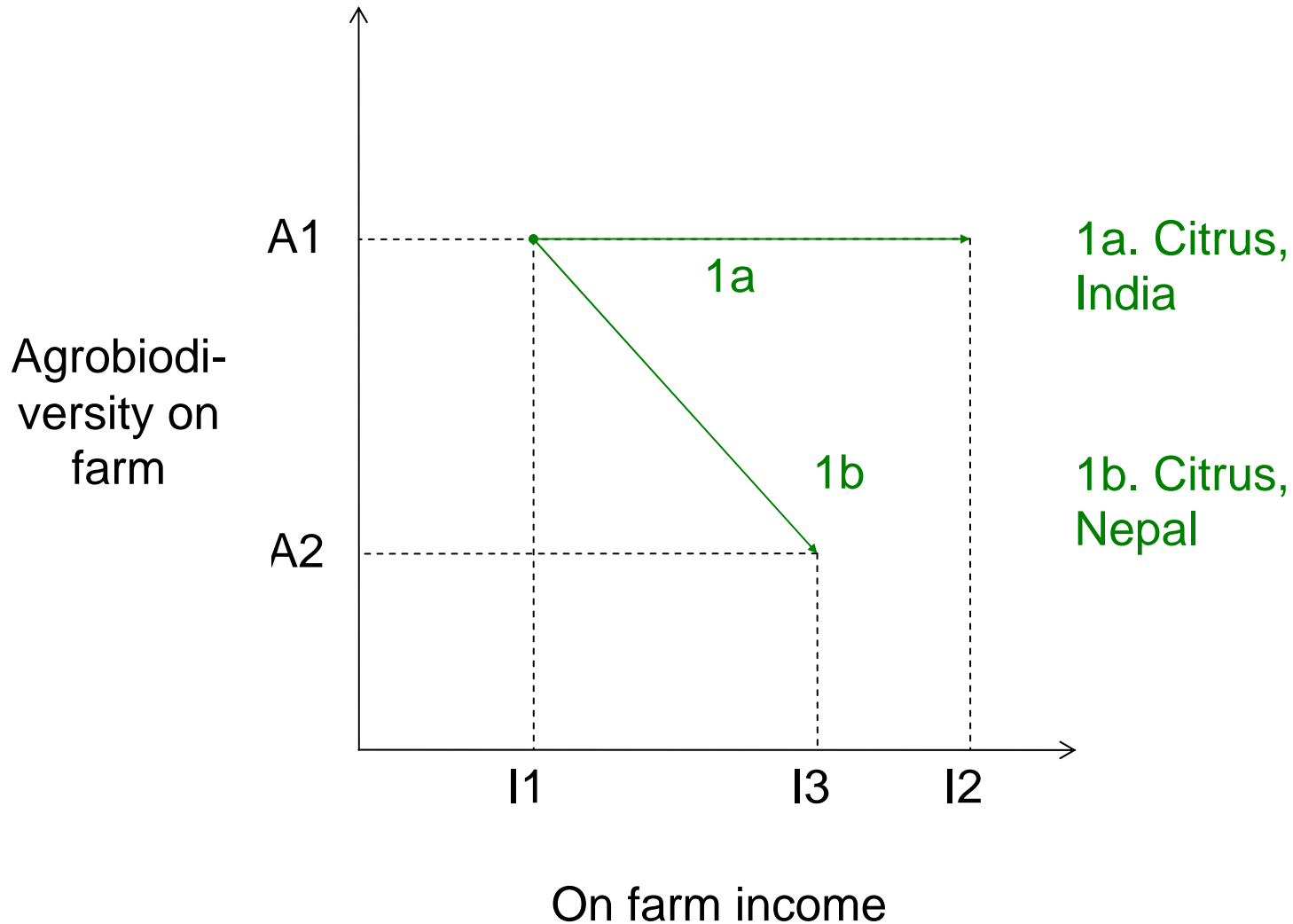
- In Northern-Eastern Hills of India Kachai lemon (*C. jambhiri*) a high yielding citrus landrace was identified
- The variety produced large yield with uniform fruit colour.
- Liked due to its special flavor and high juice content.
- Local traders are collecting and marketing to juice processing factories
- An entire village (300 households) cultivate a total of 4000 Kachai lemon trees
- Contributes to farm household income

Citrus in Nepal

Unsuccessful case:

- Five decades ago Pokhara valley in Nepal accommodated a large genetic diversity of Citrus spp.
- Mass introduction of citrus saplings from India to Nepal in 1960
- Eroded indigenous citrus germplasm from the area
- Also introduction of diseases with plant material
- Local mandarin (CHAKSI) landraces vanished

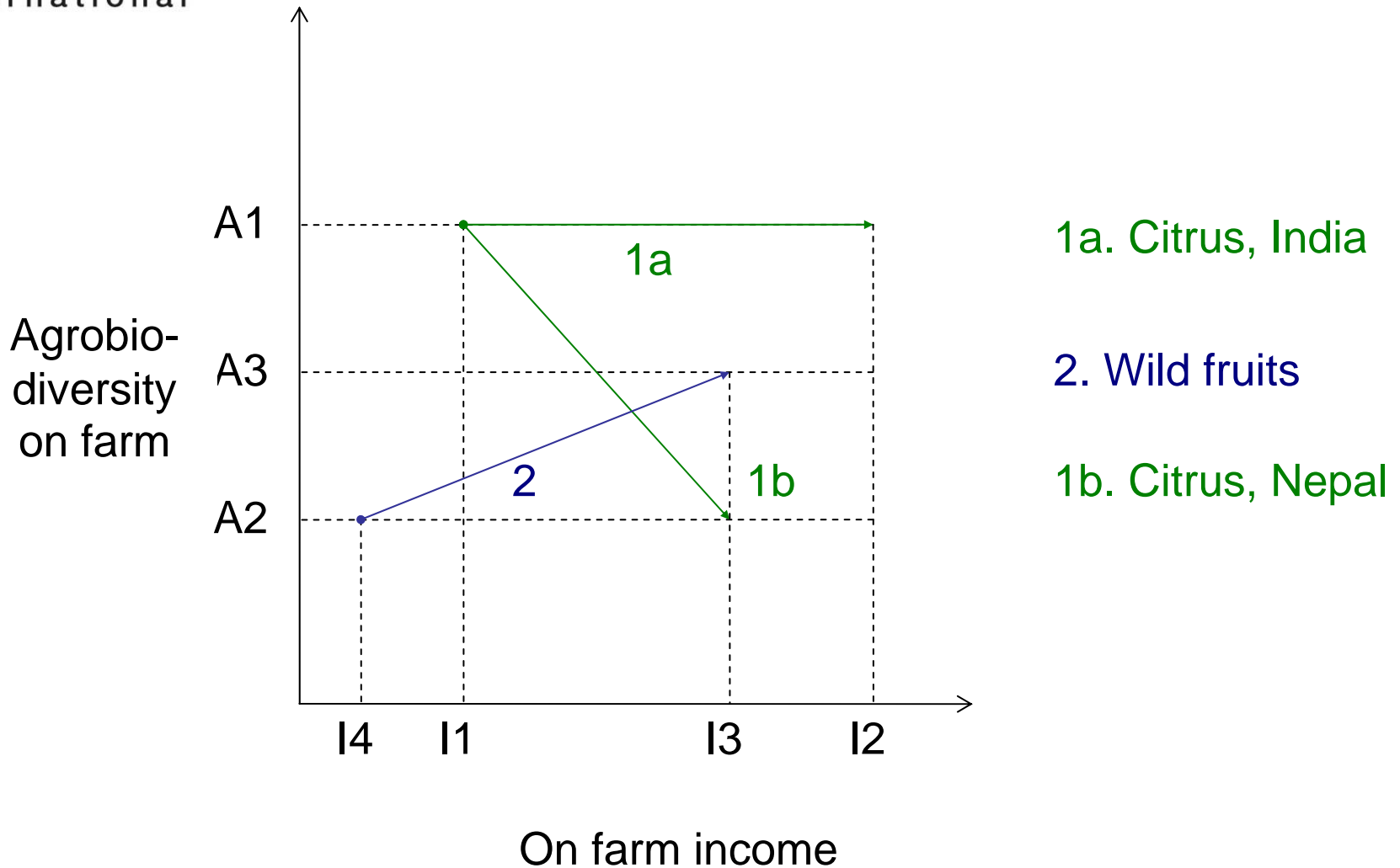
Citrus in India and Nepal



Wild fruits in the Philippines

- Tribal community in mossy rainforest of Imugan, Philippines.
- 1950-1970: Rampant forest degradation when land tenure was not secure
- When the community obtained recognition of ownership for 15.000ha they went from forest destruction to forest protection
- Need for food and cash, no possibility to expand agricultural land.
- Potential of wild fruit species for marketing was explored, starting with fruit processing.
- Species: guava (*Psidium guajava*), dagwey (*Sauriua bontocensis*) and biho-lak (*Embelia philippinensis*)
- Products: jelly, raisins, spread and vinegar
- Products recognized and popularized in supermarkets in Manila
- Encouragement to conserve them, thereby conserving existing diversity of wild fruit species in the forest.
- Further increase in number of native fruit species for fruit processing and bringing in new species from the forest to their farms.
- This further increased diversity of the fruit species in their tribal domain.

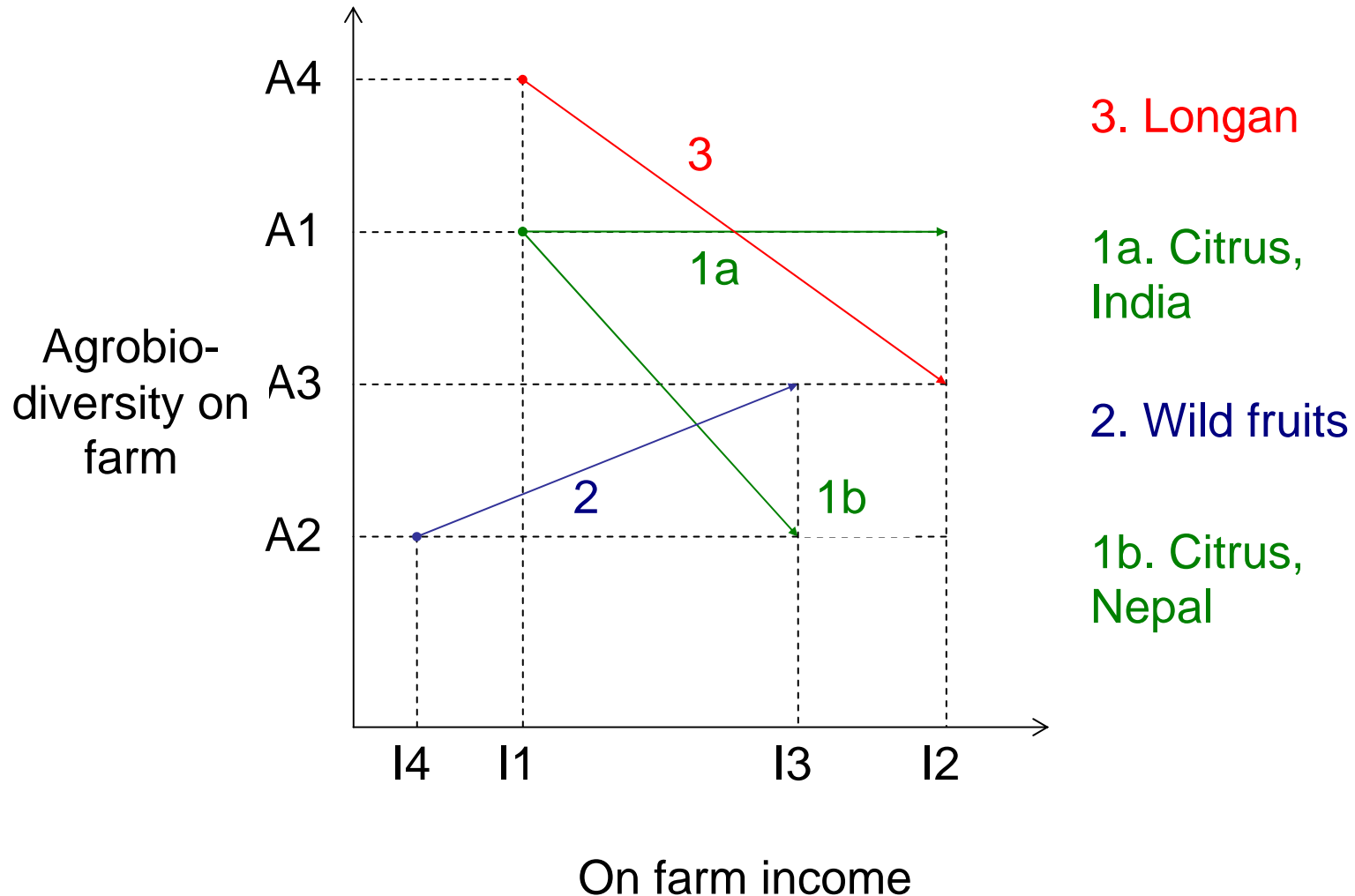
Wild fruits in the Philippines



Longan in Vietnam

- *Dimocarpus longan*, underutilised fruit
- In Vietnam, traditional fruit trees in home gardens face several problems: poor fruit quality, old trees, fruit pest and disease and poor tree management
- Quality improvement possible through adoption of modern management techniques
- Local communities and nurserymen propagated new grafted saplings of longan and mango fruit varieties in community nursery
- Planting material marketed within and between villages.
- May replace existing longan and mango diversity in home gardens
- In Southern Vietnam genetic diversity is being replaced by vegetatively propagated longan, litchi and pomelo
- GEF conservation project supported longan farmers to dry longan flesh or fruits for long distance marketing but this has ecological cost (firewood).

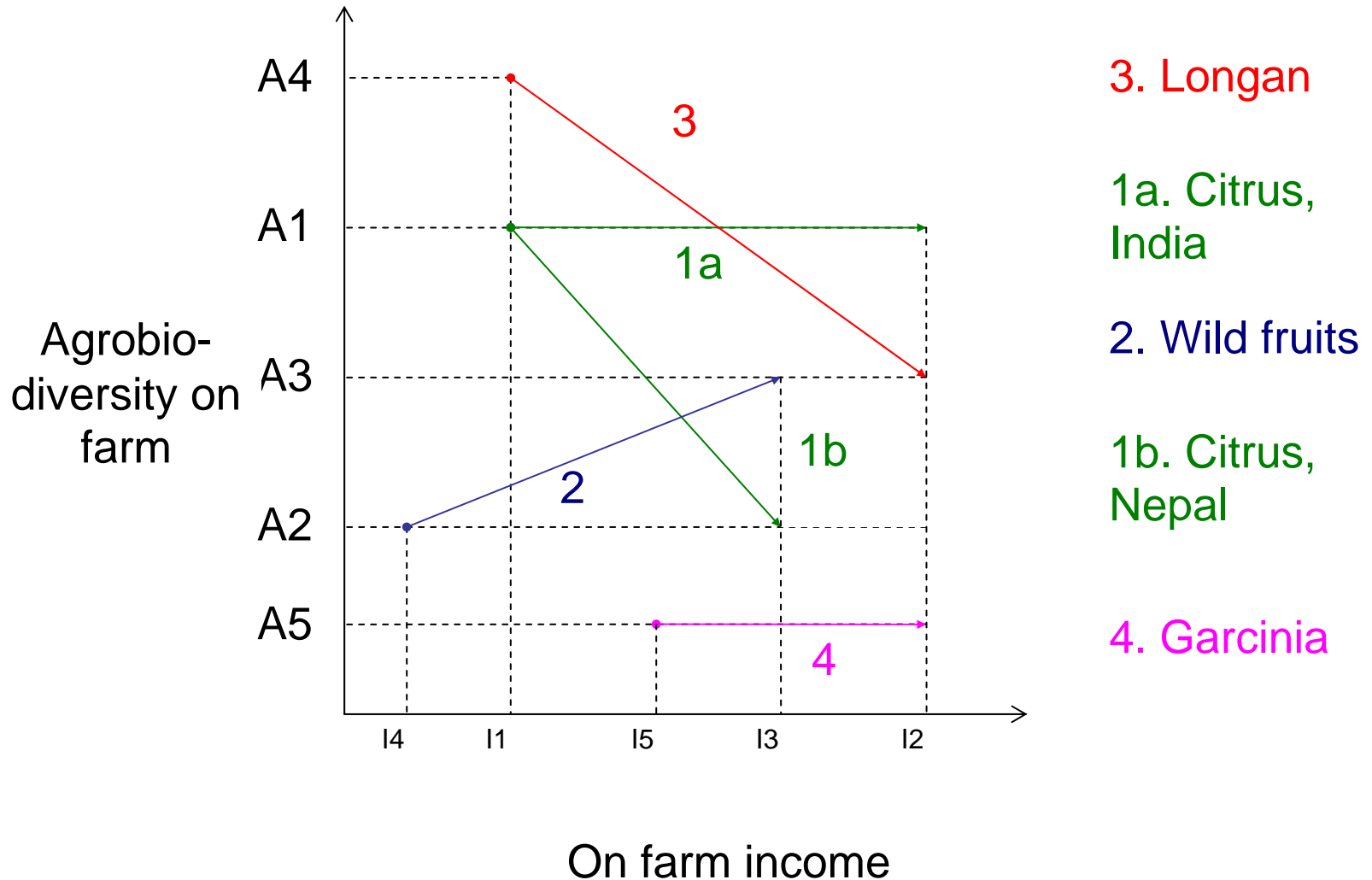
Longan in Vietnam



Garcinia in Thailand

- The cultivated Garcinia species have very narrow genetic variability
- But there is a high level of inter-specific diversity (up to 100 species of which 30 have edible fruits)
- Many have some commercial value
- In Thailand is a women group processes the leaves of Garcinia cowa
- Both the young shoots and the fruit (berry) are edible
- Raw material for a traditional dish containing cowa leaves is procured from the members of the cooperative
- They harvest young shoots from their homegardens
- When trees become too high to easily harvest the leaves, trees are either cut halfway or new seedlings are planted.
- Estimated annual profit of cowa and other products is US\$5000
- Also members receive wage payment for labour for the production at US\$3 per day.
- This has substantially increased the women's income and has given an incentive to maintain the cowa trees.

Garcinia in Thailand



Discussion

- Tropical fruits can provide an important source of income and nutrition
- Markets have the potential to increase / maintain demand for fruit diversity on farm
- But: trade-off takes place and need to be further analyzed
- Framework so far fails to incorporate social benefits (apart from income)
- Tools needed to quantify the value of the axes
- Conducive policy framework and inclusive methods needed to ensure that diversity will benefit



Thank you for your attention