



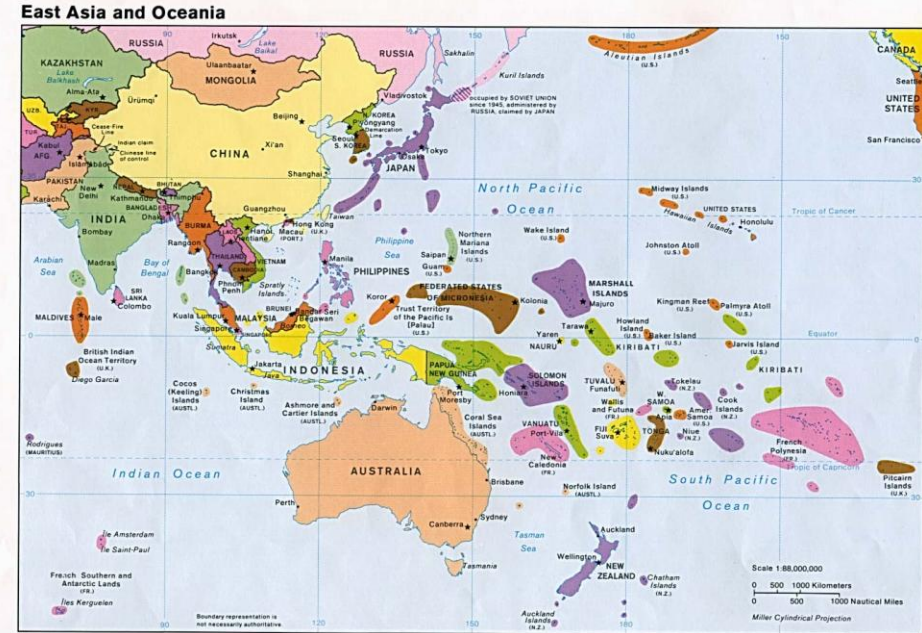
Edible insect issues in the Asia-Pacific Region

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The Asia-Pacific Region

- Covers about 23% of the world's land area.
- Has 32% of the world's arable and permanently cropped land.
- Contains 53% of the world's total population and 73% of the world's agricultural population.
- Per capita, least forested region in the world.



Source: CIA

Human entomophagy in the Asia-Pacific

- High: Cambodia, China (People's Republic), Lao People's Democratic Republic, Thailand
- Known to occur but full extent unknown: East Timor, Myanmar, Papua New Guinea, Philippines, Vietnam
- Practiced by ethnic groups: India, Indonesia, Malaysia
- Practiced by original inhabitants but now not so prevalent: Australia, New Zealand
- Minor use: Democratic People's Republic of Korea, Japan, Republic of Korea, Taiwan
- No records: Bangladesh, Bhutan, Cook Islands, Fiji, Iran, Kazakhstan, Maldives, Mongolia, Nepal, Pakistan, Samoa, Solomon Islands, Sri Lanka, Tonga, Vanuatu.
- **Insect consumption a matter of preference – demand in Thailand has increased with increasing standard of living**

Human use of edible insects

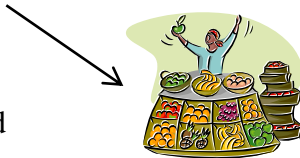
- Subsistence diet
- Recreation snacking and dining
- Tourism
- Medicinal reasons
- Stock and pet food
- Insect powders & chemicals
- Insect products: honey, silk

Market chain of edible insects

Subsistence diet



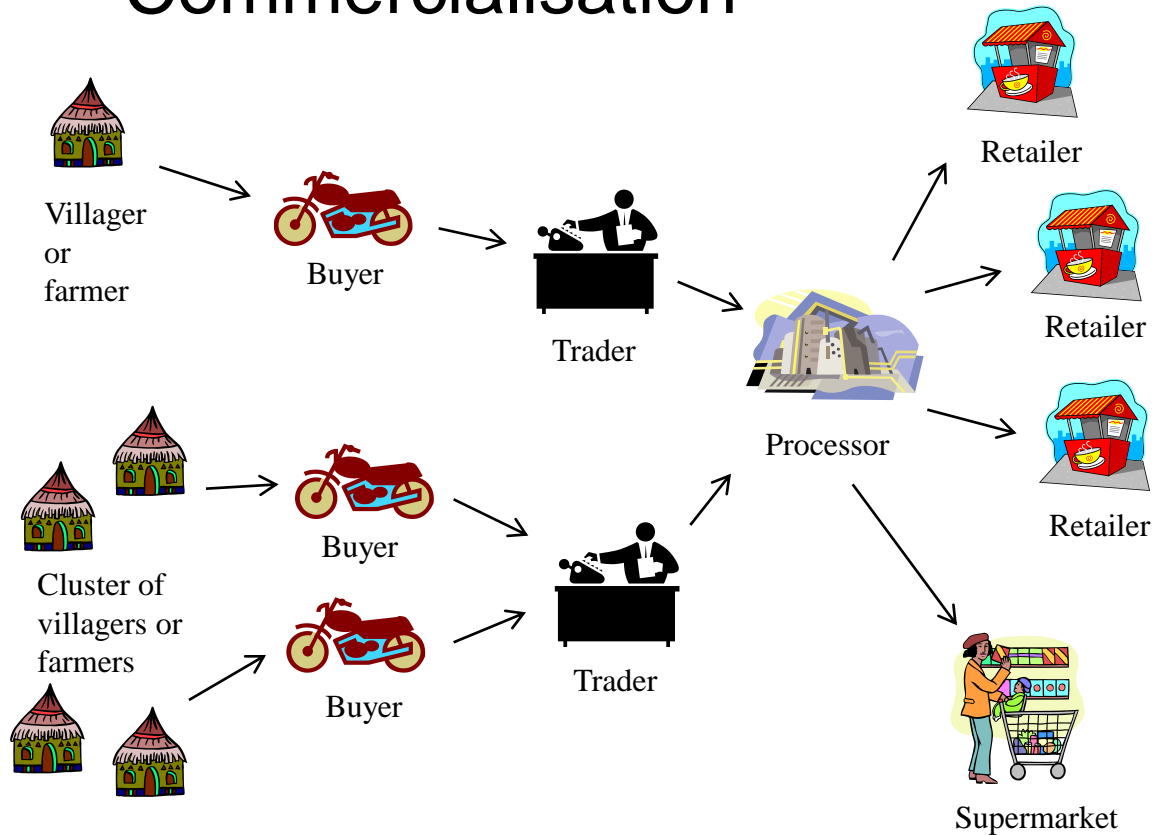
Household



Market

Individual household collects or farms insects for own use and sells or trades excess at local market

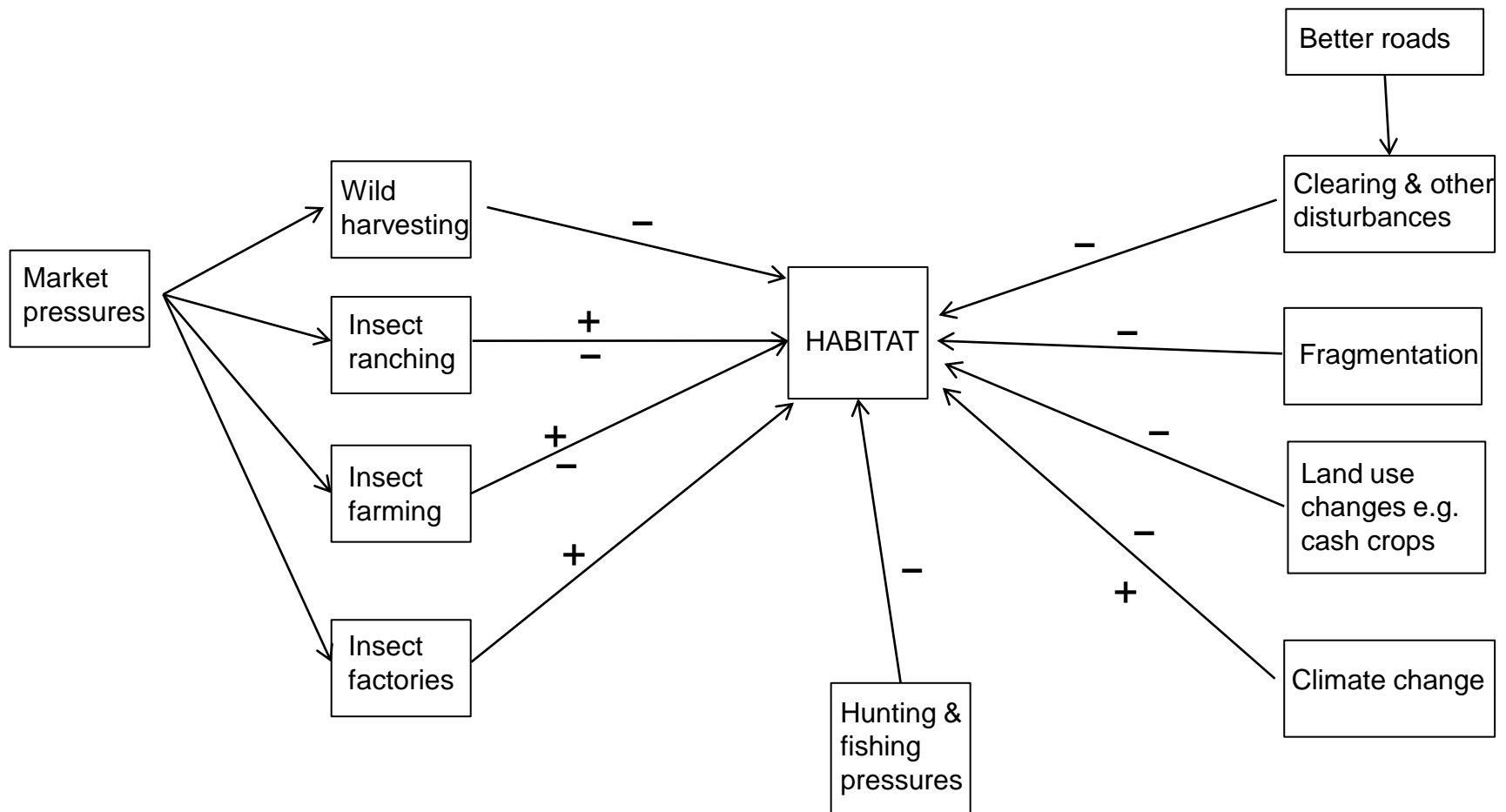
Commercialisation



Modes of insect production

- Wild harvesting: impact on source populations, habitats
- Ranching: management of wild populations to improve production (can involve habitat manipulation such as firestick farming in Australia)
- Insect farming: captive breeding in confined conditions (cages/ponds)
 - limited number of insect species farmed
 - danger of exotic escapes (e.g. golden apple snail)
- Insect factories: practicality (if commercial, local villages lose out)

Environmental & economic pressures



Knowledge gaps – local level

- Variation in degree of entomophagy across the Asia-Pacific region
- Which species are utilised? Often immature stages are utilised – need for reference collections and standard names (using both scientific and local names)
- Which species are amenable to ranching or farming?
- Sustainability of production (especially wild harvesting)
- Traditional ecological knowledge & IP
- Use in village stock production systems (aquaculture, poultry, frogs)

Knowledge gaps – post harvest

- Nutritional quality of different species
- Food safety issues
- Trade, value chains
 - Effects of commercialisation on trade (e.g. Cambodia, Lao & Myanmar to Thailand)
- Factory: practicality, economics

Wild harvesting

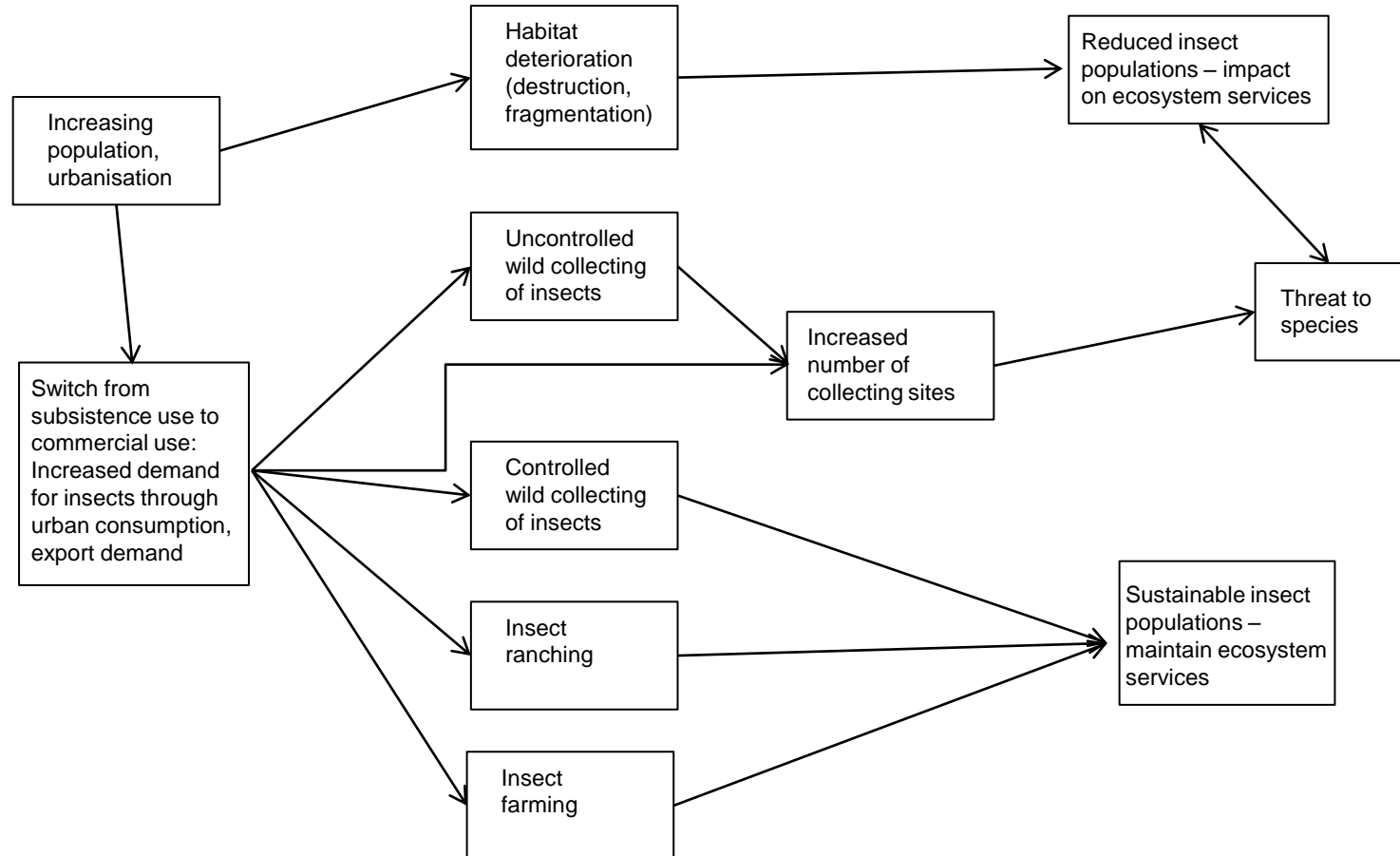
Poor will wild harvest out of economic opportunism

Implications

- Plant pests – may reduce pest levels & reduce pesticide use
- Predators & decomposers – may have adverse effect on populations, ecosystem functions
- Answer: more information on ecology of harvested species to develop sustainable harvesting protocols



Effect of increased demand on supply



Traditional knowledge

- Importance of recognising traditional ecological knowledge – intellectual property rights
- Value of traditional foods for health
- Opportunities to combine entomophagy and traditional knowledge with cultural tourism
- Local communities to benefit by running own insect “industries”



Final comments

- Main aim: insect food to alleviate poverty – better nutrition
- Commercialisation of entomophagy may lead to greater production for the not so poor (snacks, medical, pet and stock food) – poor at village level could lose out
- Important to consider great variation across the world on why insects are eaten, how they are produced and how they are utilised as food – a different range of approaches is required for each situation
- Invertebrates known for their diversity – use utilise this diversity and do not come to rely on a small number of species
- Recognise and utilise knowledge of people who are entomophagous

Thank you

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