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Participatory technology development in
support of artisanal palm oil production in
Ghana.

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PARTICIPATORY TECHNOLOGY DEVELOPMENT IN SUPPORT OF ARTISANAL PALM OIL PRODUCTION IN GHANA

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OUTLINE

- Context
- Constraints identified?
- Why participatory technology development approach?
- How approach was used
- Some outcomes
- Benefits and challenges of approach
- Conclusion

CONTEXT

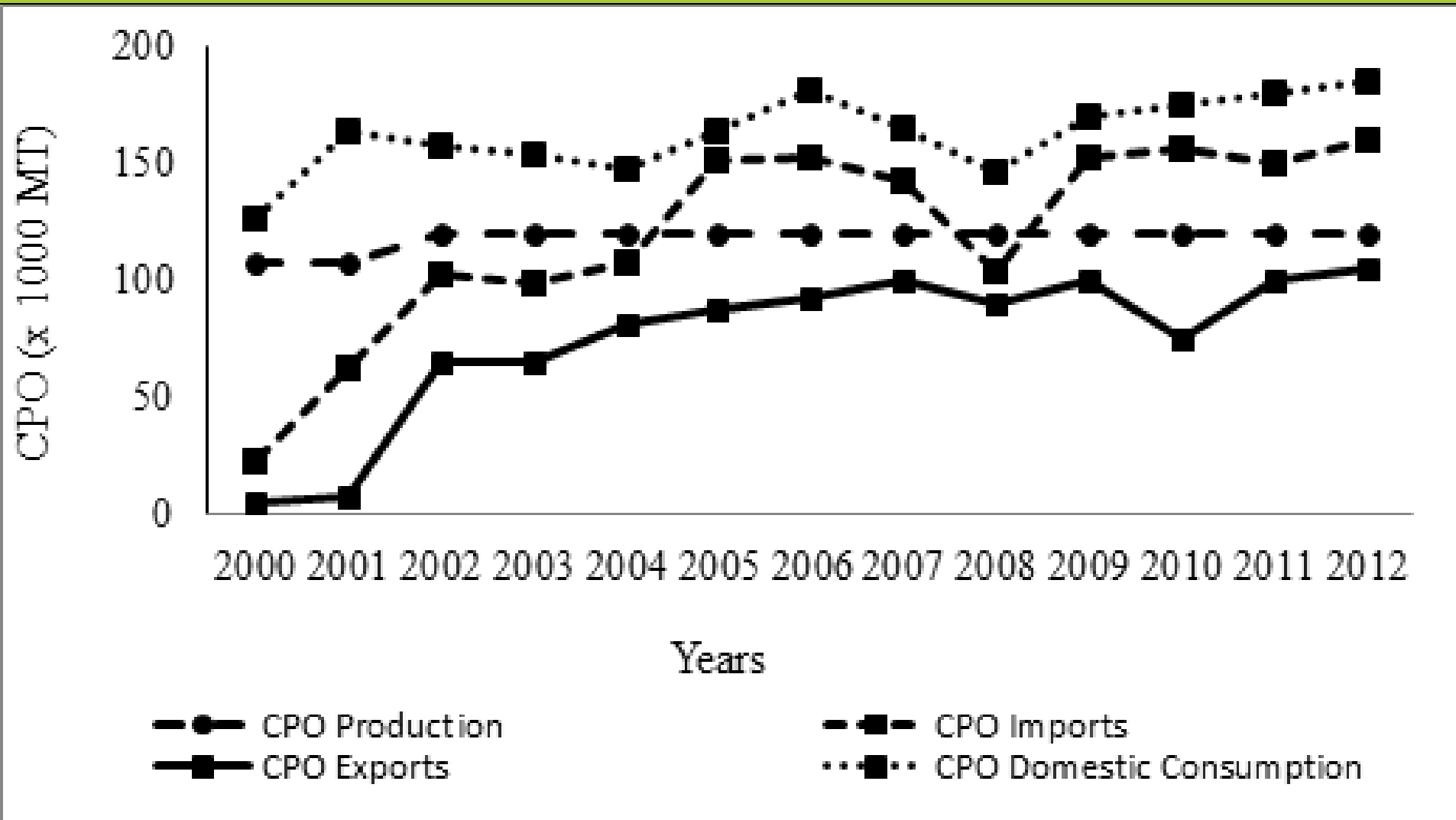


Fig. 1 High quality CPO Production, consumption, imports over 12 years

- Ghana's projections (2010-2025) suggest modest increase in production.

BUT

- Domestic consumption will increase drastically (GoG, 2010).

- West Africa market demands 1 million MT/year.

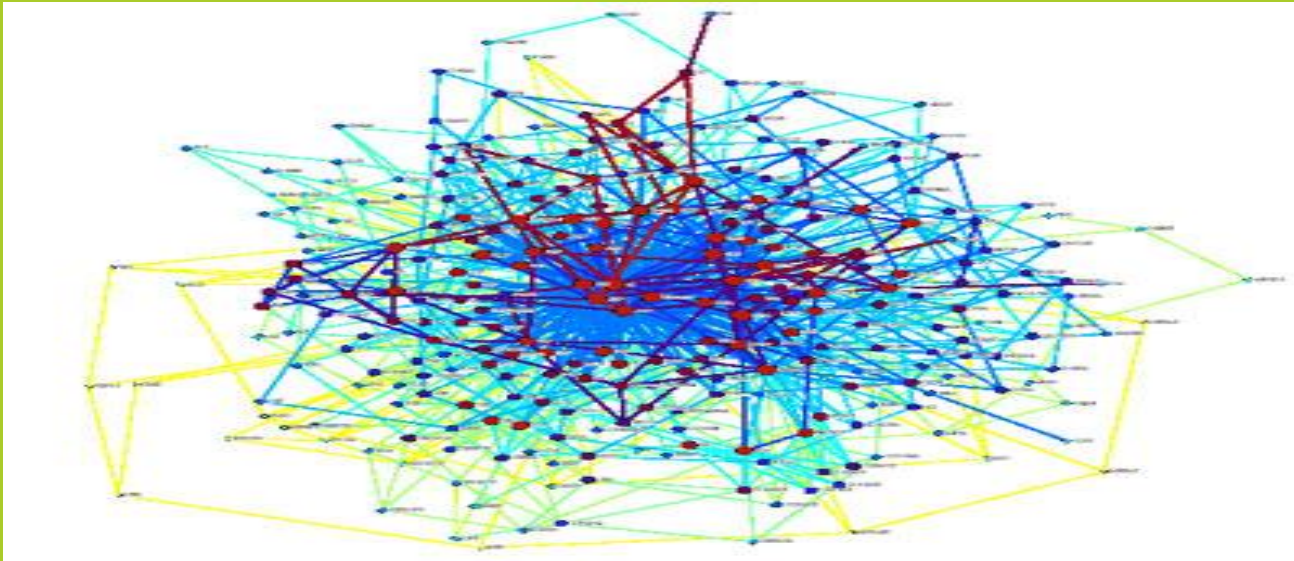
- Small-scale independent farmers cultivate 87% of land
- Produce about 80% of fresh fruit bunches (MoFA, 2011)
- Produce 80% of crude palm oil
- Could be key to bridging gap in production

CONSTRAINTS IDENTIFIED

- Exploratory and scoping studies
low oil extraction rate, poor quality CPO, poor interactions, low access to remunerative markets, low technological innovations
- Diagnostic study and validation workshop
Improving quality of CPO produced by small-scale processors

WHY PARTICIPATORY TECHNOLOGY DEVELOPMENT APPROACH?

- Entry point is - Complex, Multi-level, Dynamic, Social, Technical, Institutional, Organisational



- Linear approach is a **NO, for real-life complexities**

- PTD in the context of CoS-SIS



- Is an alternative

HOW APPROACH WAS USED



- Ethnography to understand actors' perspective
- Joint experimentation – 4 storage periods
- variation of yield and quality with storage, profit analysis, sensory evaluation, laboratory analysis
- Local stakeholders' platform workshops
- Concerted innovation group activities

SOME OUTCOMES

Increasing storage leads to poor quality, and yield declines after 14 days

Storage periods not profitable for current markets.

7 days most profitable for household market.

3 days profitable for local industrial or export

- Own experimentation
- Discussion and learning at platform
- CIG training activities
- Exploring new markets

Improved palm oil quality

Table 1 Mean concentrations and standard errors of free fatty acids (FFA in %) of CPO samples obtained from overall experimental (*ex-ante* and *ex-post*) and control groups in Kwaebibirem District. (n=9, for each group)

Groups	Overall mean and standard errors of FFA concentrations (%)	
Experimental <i>ex-ante</i>		20.4 ± 1.64 ^{a[1]}
Experimental <i>ex-post</i>		11.4 ± 0.85 ^b
Control		19.6 ± 1.56 ^a

^[1] Means followed by different superscripts are significantly (P<0.05) different

BENEFITS OF APPROACH

- Understand processors' knowledge, capability and interdependency in several networks
- Multi-scale stakeholder approach for interaction at different organisational levels, e.g. between mill practitioners, within scientific or extension community; then between mill practitioners, scientists and extension
- Convergence of scientific and practical knowledge- leads to useful knowledge
- The 'social' of development and not only technical is rendered

CHALLENGES

- Findings cannot be easily generalised
- Differences in theoretical perspectives and methodologies between sciences
- Requires a lot of research time and patience to ensure all relevant stakeholders are on board
- Integrating language, terminologies and ways of creating knowledge from different disciplines; between disciplines and practical knowledge is difficult

CONCLUSION

- Intervention should first understand dynamics then use that social perspective as start point
- Changes needed in how social and technical scientists look at issues
- Instead of clearly demarcated and protected boundaries, sciences should be a continuum
- All relevant disciplines along continuum can be used for addressing constraints
- Smallholders see problem as ONE not pieces of social or technical issues