

JATROPHA FEEDSTOCK PRODUCTION MODELS AND SUSTAINABILITY: A COMPARISON



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Provoking statement?

“If implemented with local needs at heart, bio-energy value chains can make positive contribution to employment, food & energy security and sustainable rural development”



Outline

- **Drivers for Jatropha feedstock production**
- **Jatropha value chain**
- **Key Sustainability Principles**
- **Production models**
- **Key Success Issues**

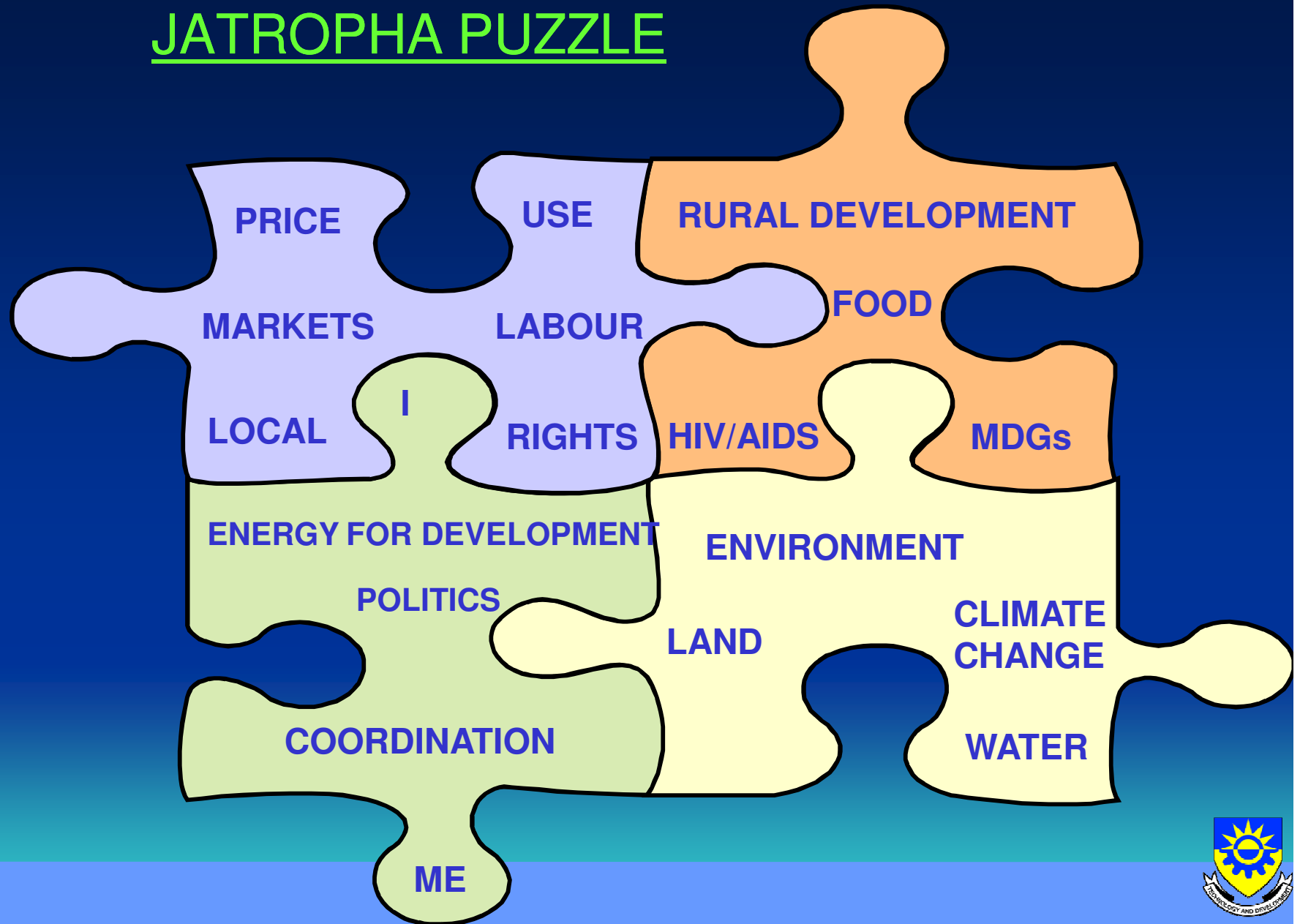


Why Jatropha Development?

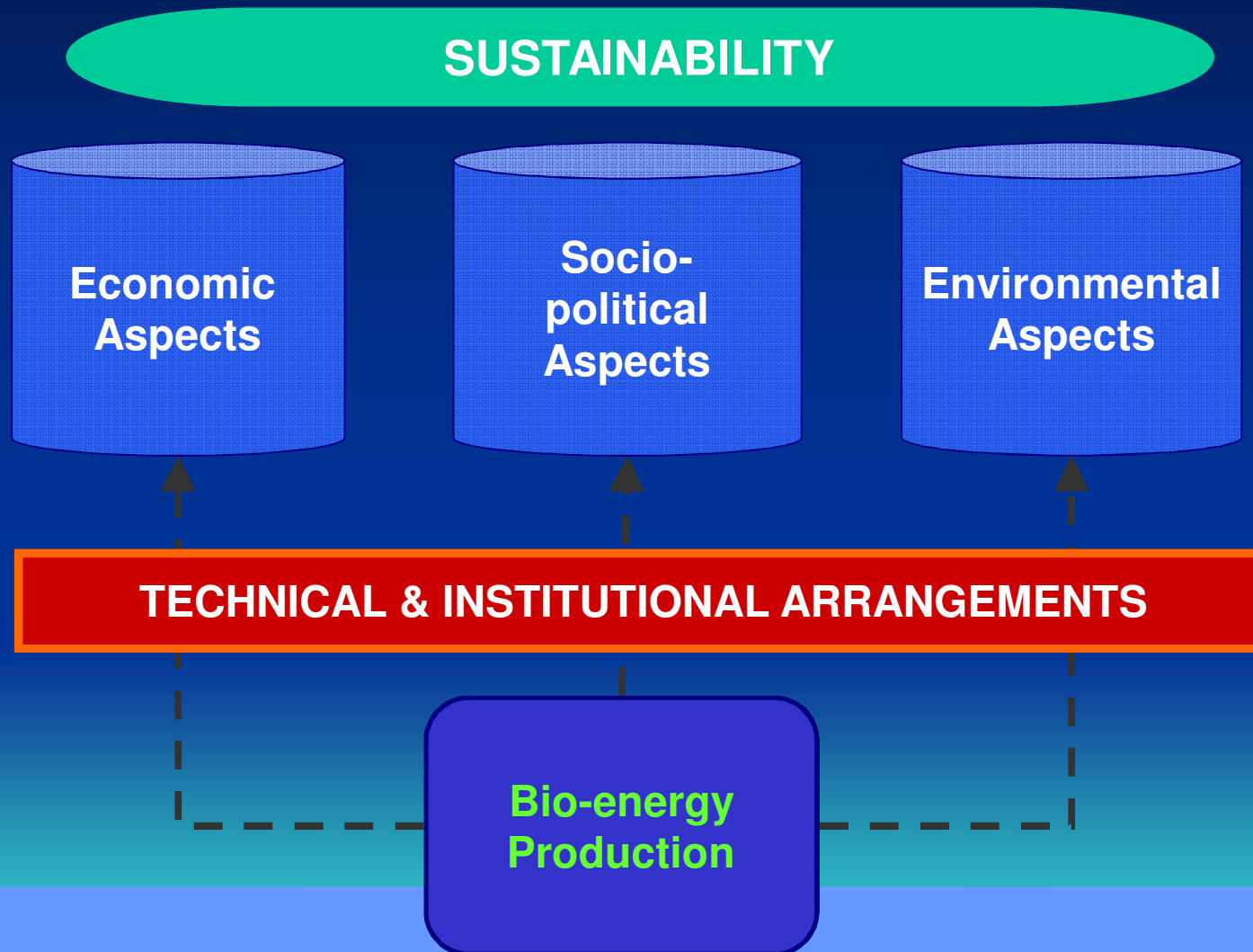
- **Import substitution & energy security**
- **Global warming & Climate change impacts**
- **National Development Plans and investments**
- **MDGs , poverty reduction targets**
- **Decreasing crop yields/ha over time (food insecurity)**
- **Low population density & availability of land in SADC**
- **Existence of Jatropha in communities**



JATROPHA PUZZLE



BIO-ENERGY & SUSTAINABILITY



JATROPHA



Jatropha Plant



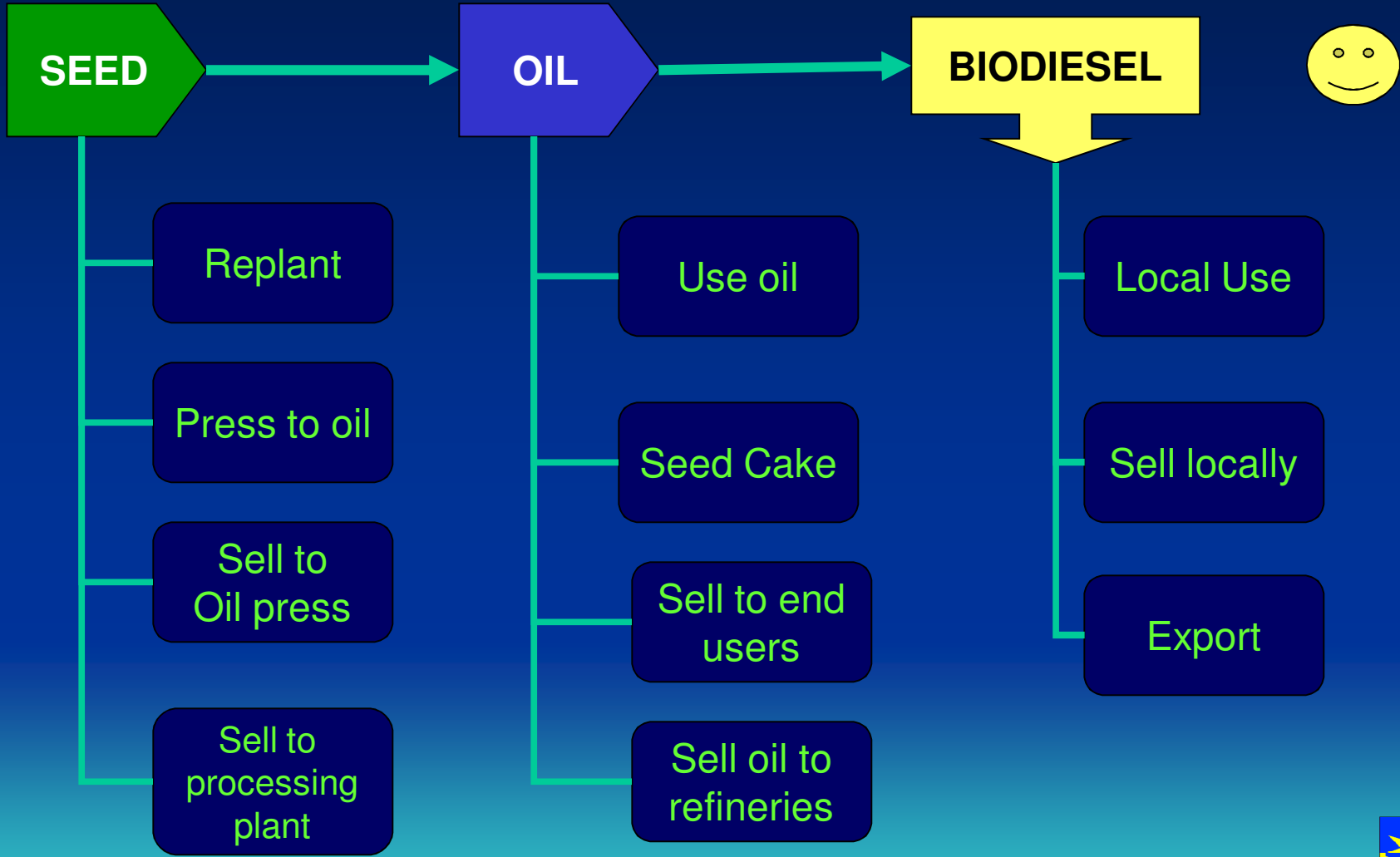
Jatropha oil yield tons/ha needed for viability



- In literature, the range is between 0.6 to 23 MT per ha: translates into 0.2 to 8 MT of oil per ha
- Seed tests revealed oil content/wt of between 23-37%
- Yields dependability on variety, age, soil, water, labour, agronomical practice



JATROPHA VALUE CHAIN



CARBON MARKETS



KEY SUSTAINABILITY PRINCIPLES

- Laws and regulations
- Food security and the right of choice
- Carbon conservation and land use change
- Soil conservation, Biodiversity & HCV, Water
- Labour & rights
- Land rights & community relations



ECONOMIC VIABILITY

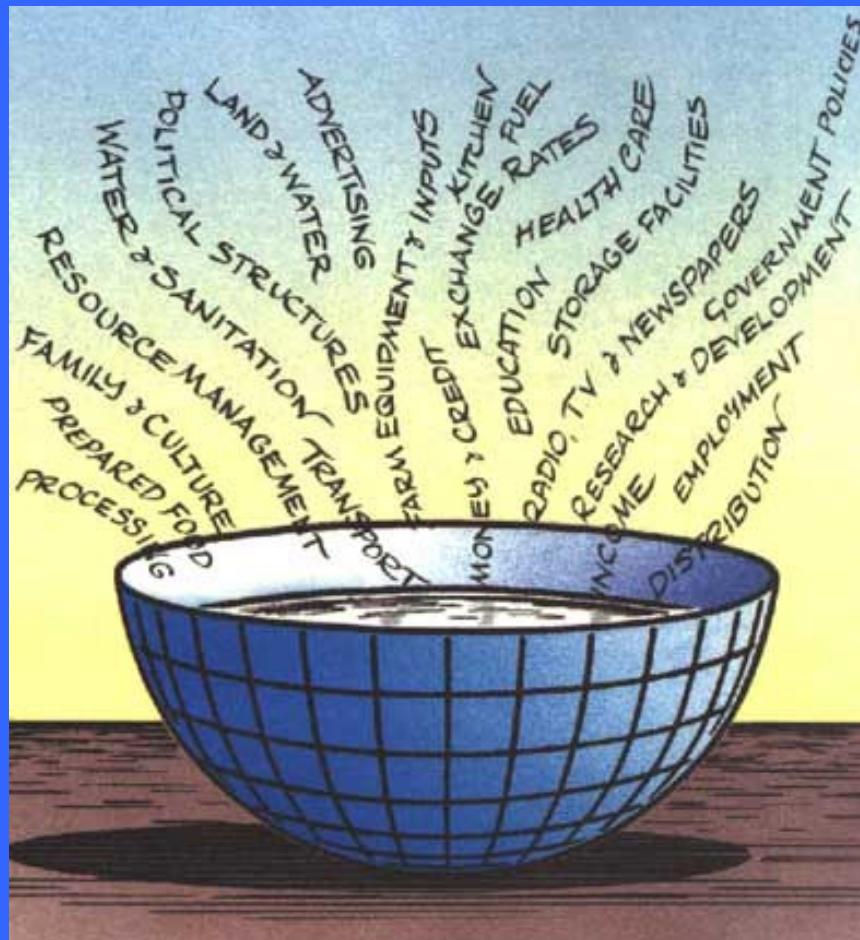


PRINCIPLE: LAWS AND REGULATIONS

100 % Compliance



PRINCIPLE: FOOD SECURITY



PRINCIPLE : LAND USE CHANGE & CARBON



SLASH & BURN

LU CHANGE &

RELEASE OF GHG

COMMON IN MOST
MODELS



PRINCIPLE: LABOUR & RIGHTS



PRINCIPLE: LAND RIGHTS & LAND ADMIN



PRINCIPLE 5: BIODIVERSITY, HCV, SOIL , CONSERVATION



Potential Impacts & Sustainability



JATROPHA AND SUSTAINABILITY

Sustainability

Economic Dimension

Socio-political Dimension

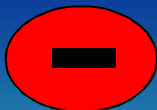
Environmental Dimension



- Direct Benefits
- Jobs
- Tech transfer
- Indirect benefits
- Energy security
- Commercialisation

- Income security
- Education & Health
- Social rights
- Food security
- Energy access
- Community stability

- Regeneration of soils
- Reforestation
- Conservation (water, carbon, soil HCV)



- Opportunity costs of land and labour
- Costs of project failure
- Dependency

- Labour migration
- Social tensions
- HIV/AIDS

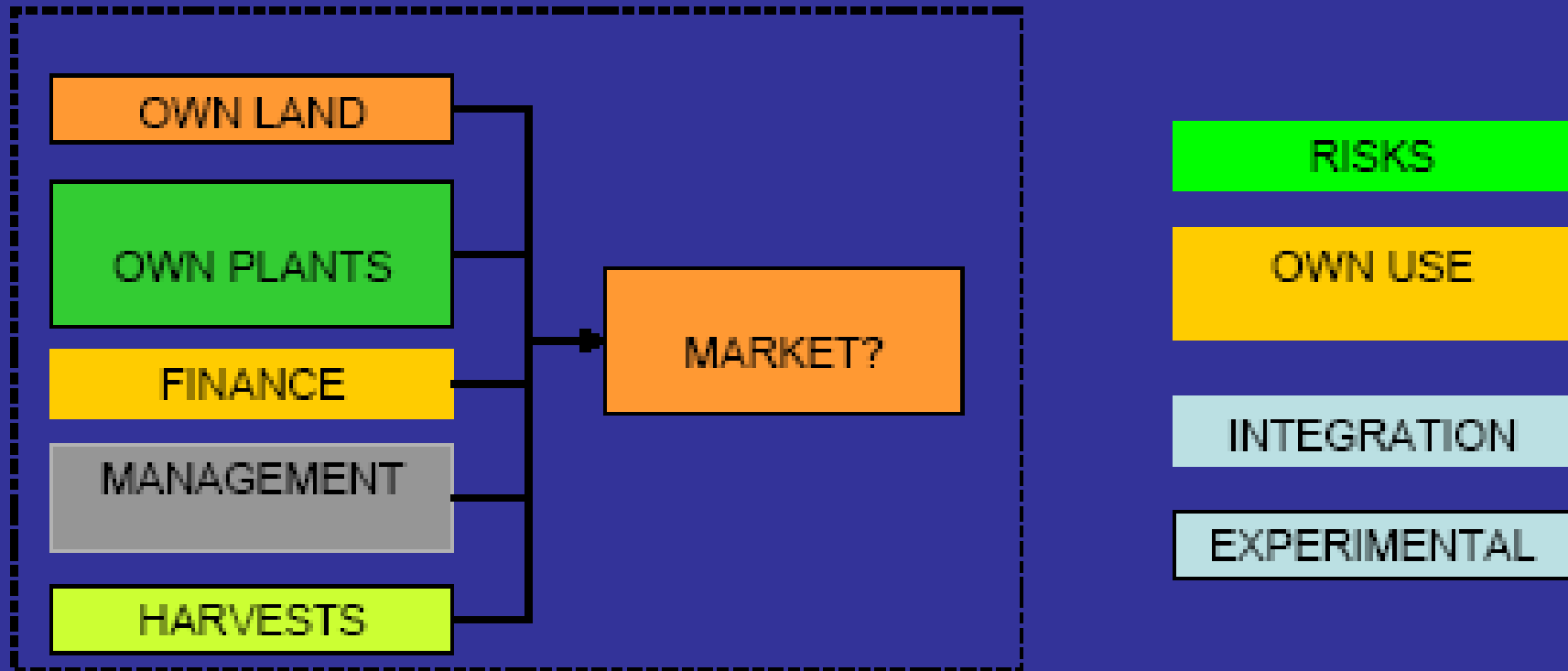
- Loss of biodiversity
- Deforestation
- Land Use Change
- Loss of carbon



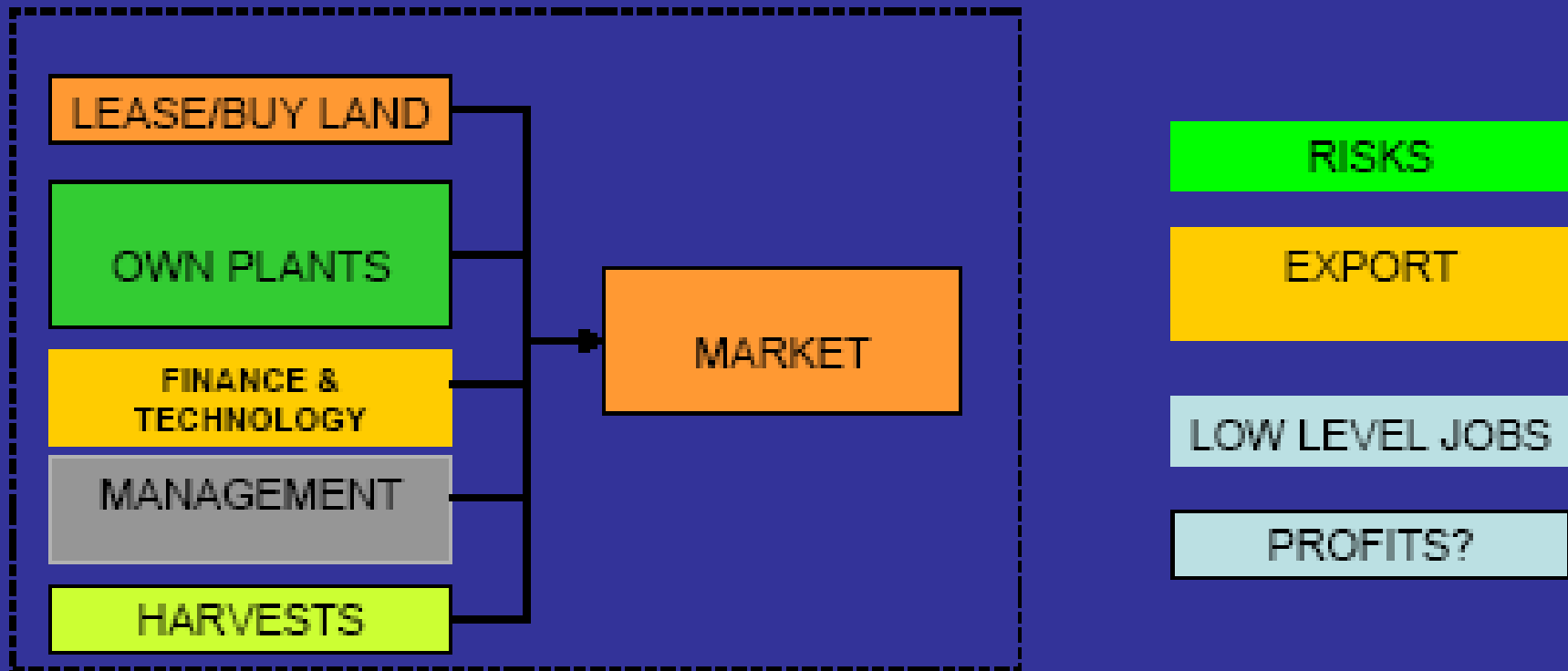
JATROPHA FEEDSTOCK PRODUCTION MODELS OPTIONS



PRIVATE FARMER/INDIVIDUAL INITIATIVES



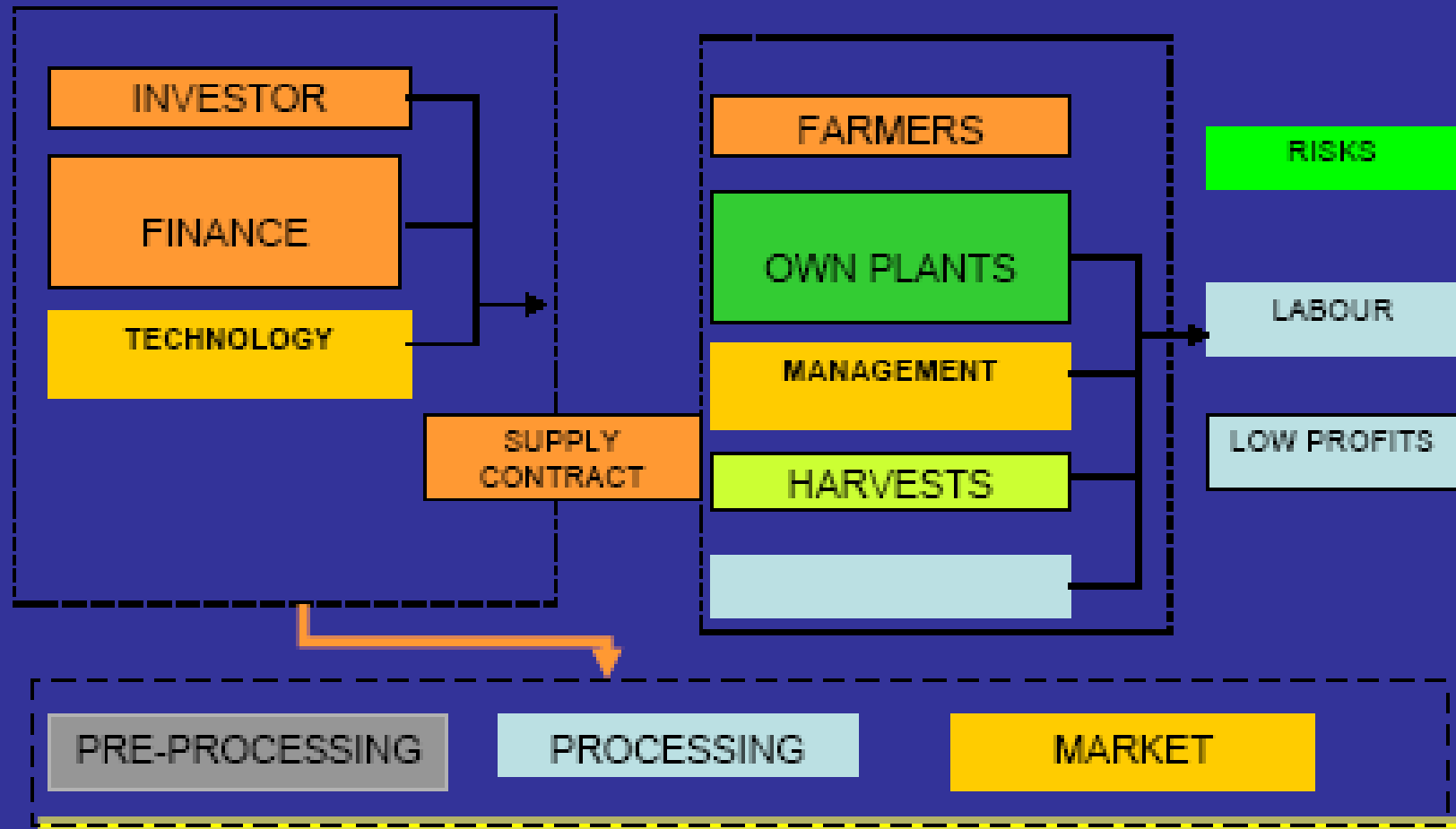
INVESTOR DRIVEN



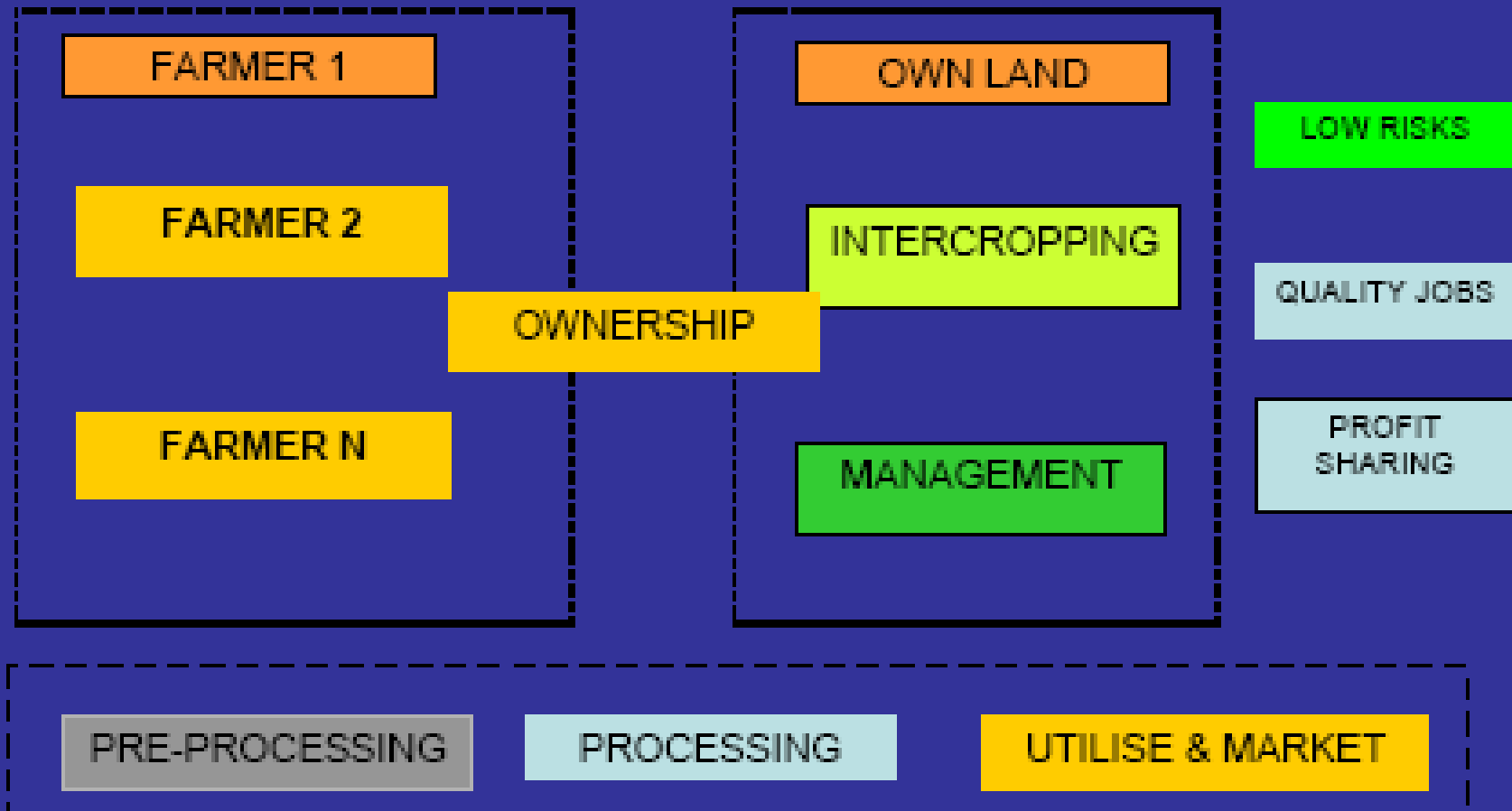
HIGH PROMISES



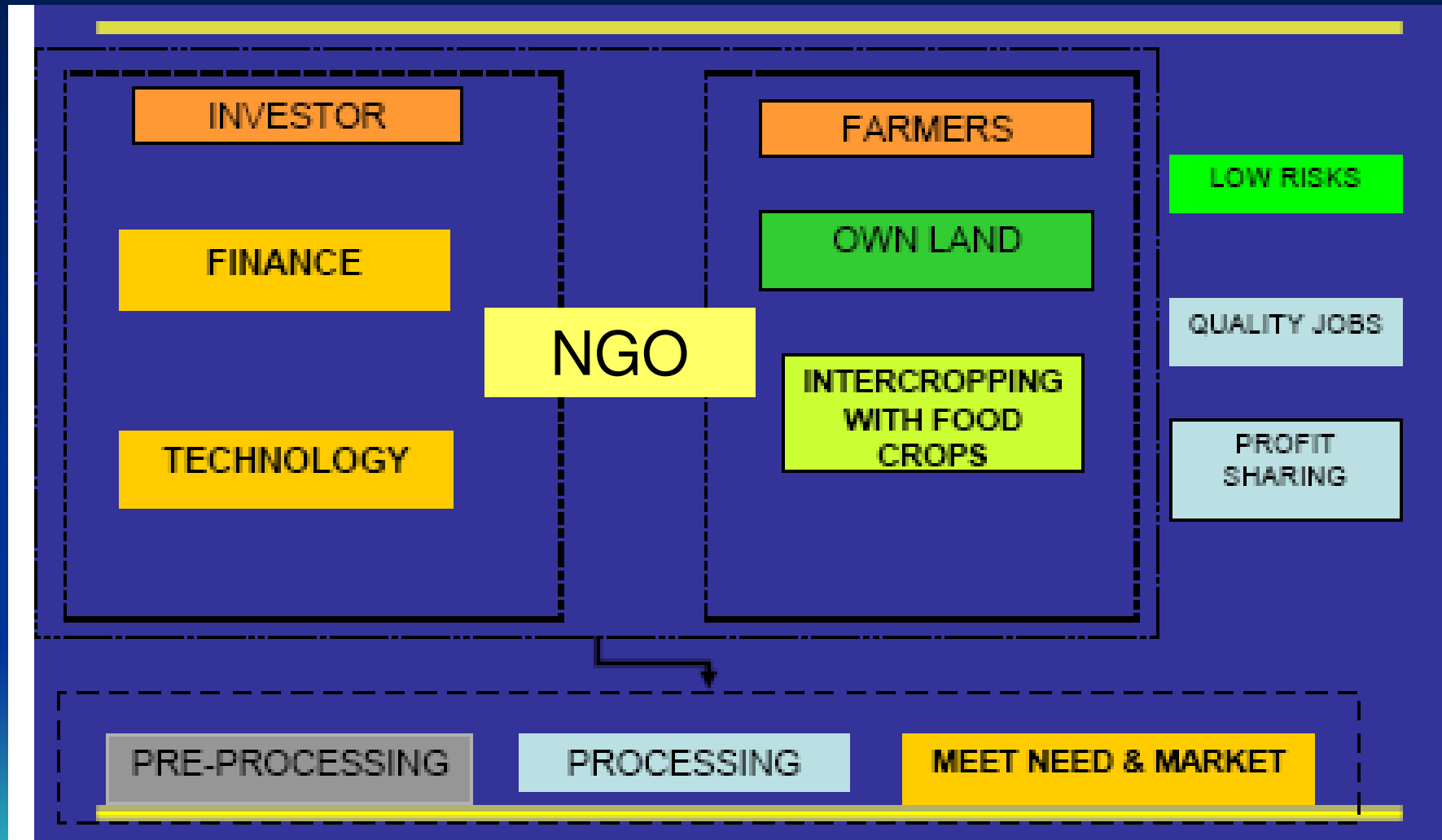
OUTGROWER SCHEMES



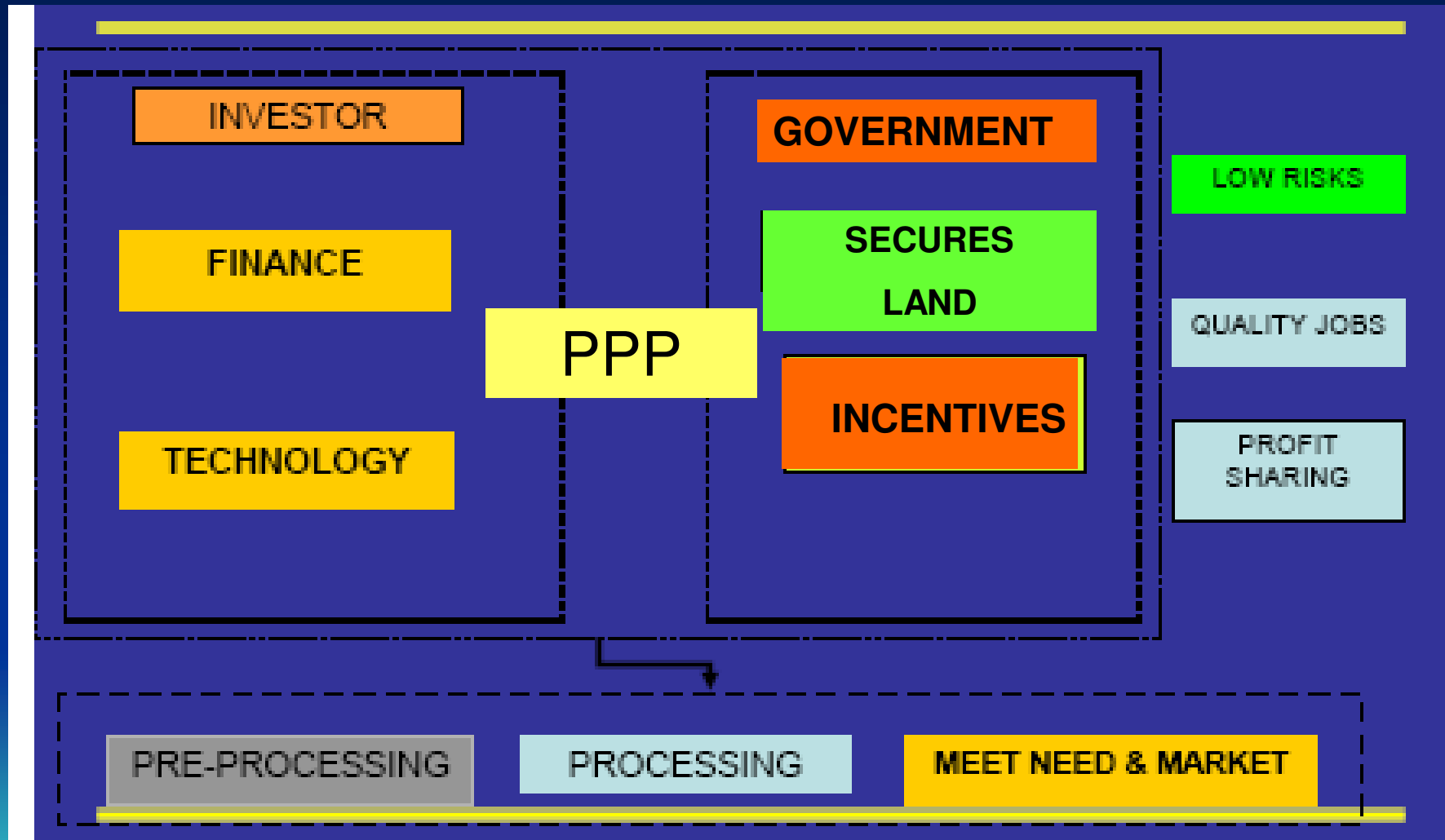
FARMERS COOPERATIVES



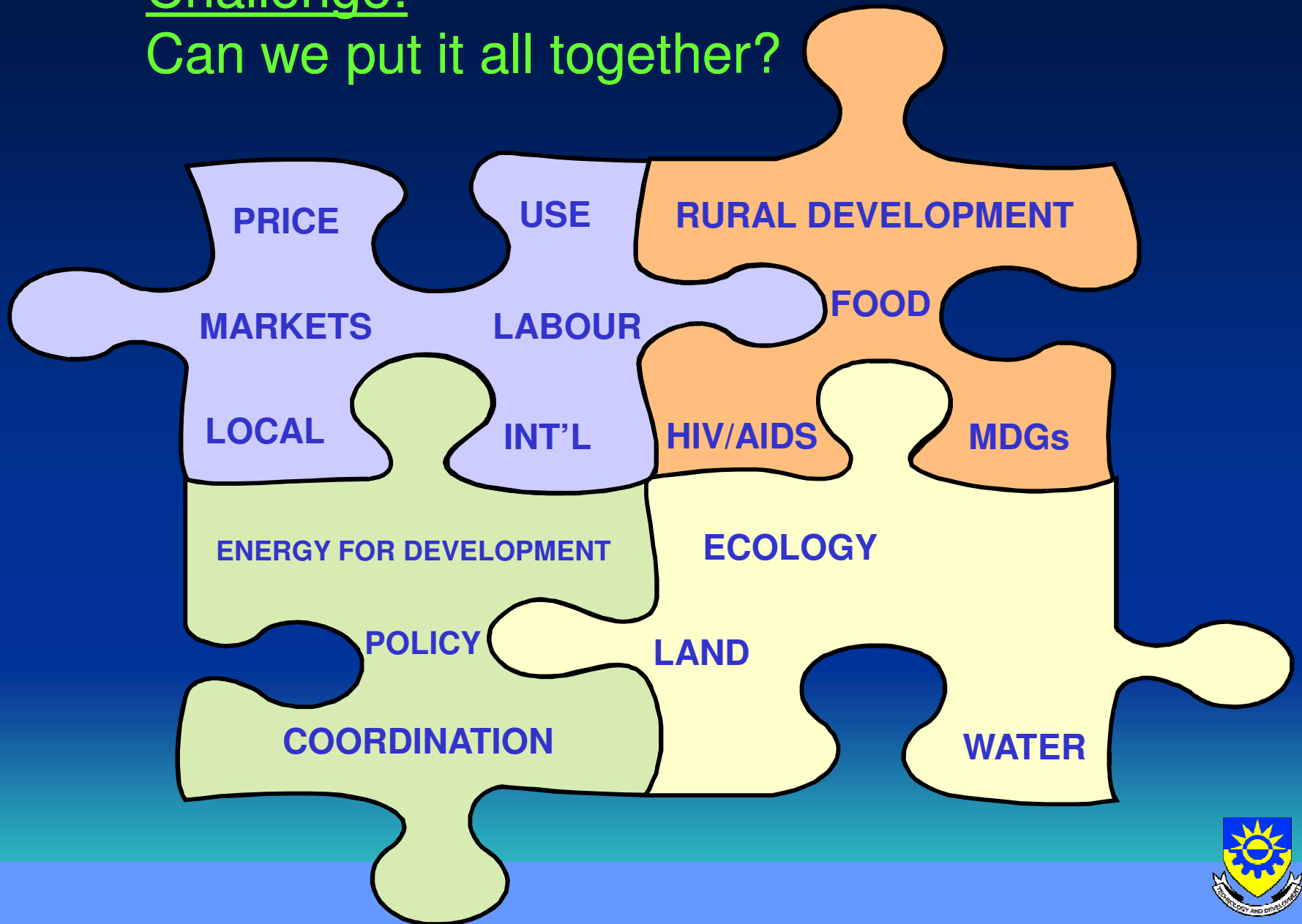
COMMUNITY DEVELOPMENT DRIVEN MODEL



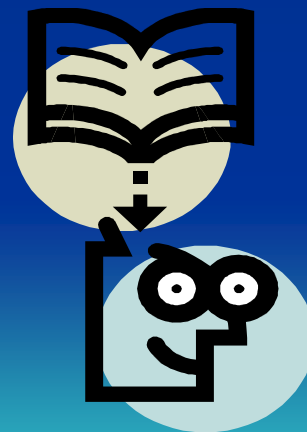
GOVERNMENT INITIATED MODEL (PPP)



Challenge:
Can we put it all together?



YES BUT.....



Key success Issues

1. APPROPRIATE POLICIES AND REGULATIONS
2. APPROPRIATE MODELS BASED ON LOCAL KNOWLEDGE
3. APPROPRIATE TECH FOR PRIMARY & SECONDARY BENEFICIATION
4. DELIBERATE MARKETS & DISTRIBUTION INFRASTRUCTURE
5. SUSTAINABILITY CRITERIA AND STANDARDS
6. CONTINUOUS CAPACITY BUILDING & AWARENESS
7. CONTINUOUS RESEARCH & DEVELOPMENT



THANK YOU



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