

# **Attracting Investment**

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## **Investment Trends and Perspectives on Jatropha**

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**June 2008  
Euro-Latin Capital  
Christian Langaard**

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**2008 Jatropha World  
Miami  
11<sup>th</sup> June, 2008**



# Today's agenda

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**Risk Appetite for Biofuels**

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**Investment Trends and perspective on jatropha**

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**Selection Criteria and characteristics of successful operation**

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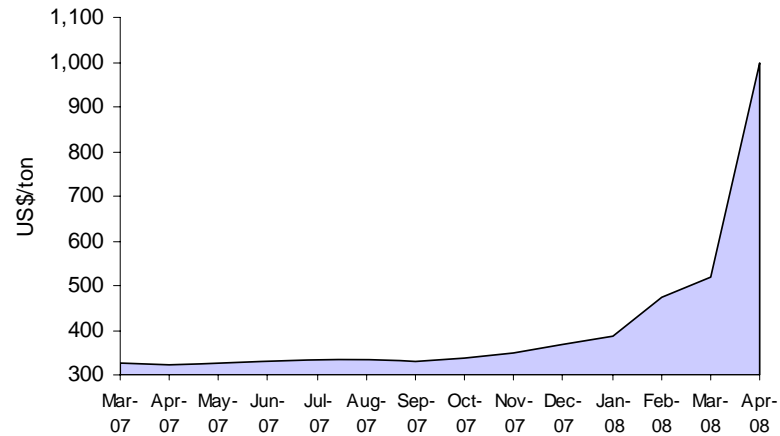
# It's bad !

- Financial, Economic, Mortgage and Housing crisis

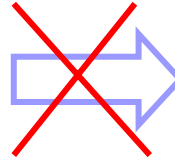


- Food Crisis

Rice Export Prices



## The culprit: Biofuels is an easy target – reality different



Food inflation

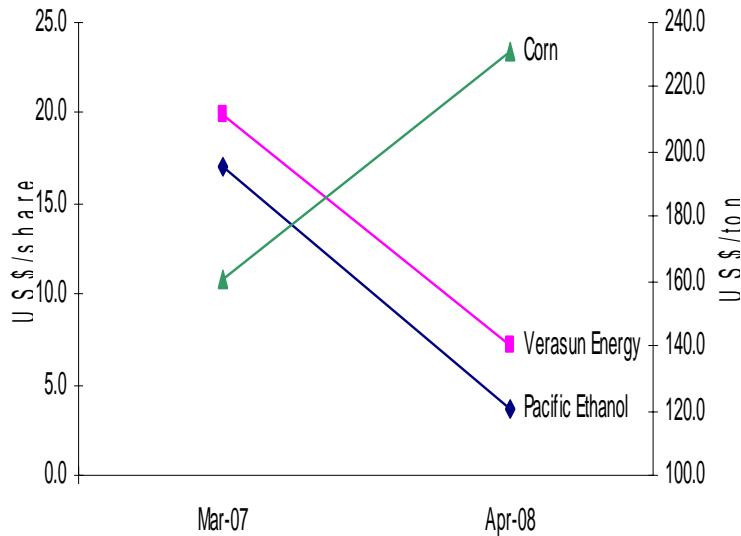
- **Reasons for food price inflation;**
  - High oil price impact food production costs (energy, fertilizers)
  - Strong increase in food demand, esp. China and India
  - Weather/crop-failures, i.e. climate change itself
  - US Dollar weakness, etc.
  
- **Biofuels represent <1% of the global available arable land**
  
- **Very small % of biomass used for biofuels, e.g.**
  - 18-20% of Soybean biomass is oil, so,
  - If biofuels share of global soybean oil is 10%;
  - <2 % of Soybean biomass used for biodiesel
  
- **Reality for corn and rape worse, but grossly exaggerated**

“The tail wagging the dog?”

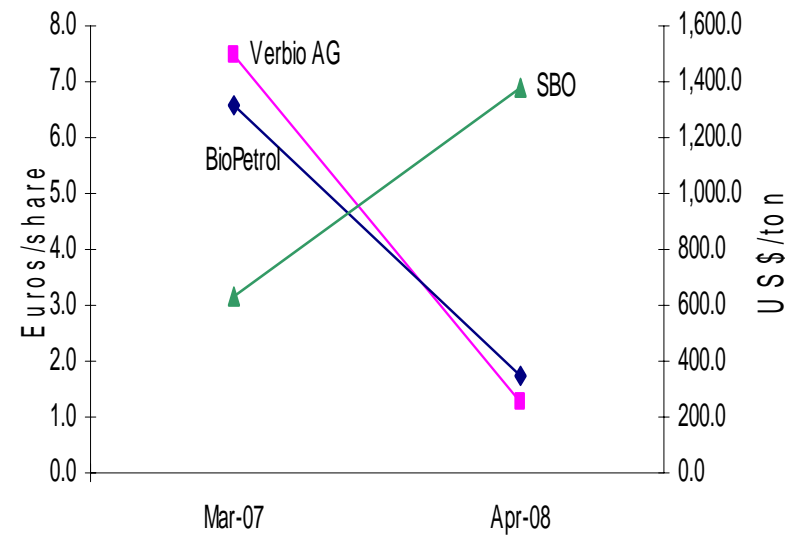
# Biofuels feedstock crisis

But the food price inflation did provoke a biofuels crisis...

Comparison between Corn and corn-based Ethanol stocks prices



Comparison between SBO and Biodiesel stocks prices

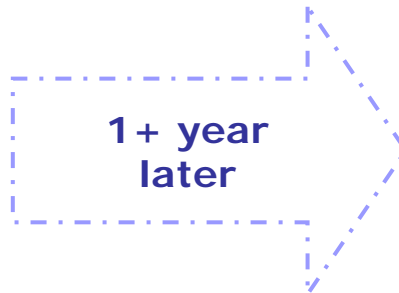


... because we are using the wrong feedstocks

## Poor practices compromised industry perception



- Biofuels – “saving the planet” (UN)
  - reduce CO2 emissions
  - reduce energy dependence on hostile regimes
  - providing rural jobs
  - huge IRR expectations



- Biofuels – “crime to humanity” (UN)
  - people die of hunger
  - pay more taxes (biofuel subsidies)
  - plants close down
  - accused of polluting more than oil we replace

“The wheels came off!”

## How to deal with this reality ⇒ Sustainability focus

### Good or bad news for jatropha?

- YES – the oil does not compete with food
- NO – if it competes with grains for land
- CHALLENGE: get meal to provide food

*“The world is dying of hunger – and we want to plant... poison” ?*

### The totality needs to be good

- Maximize use of all the biomass
- Generate crops between rows
- Inter-cropping & silviculture
- Optimize food-value of by-products

... to preserve the support for jatropha

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**Selection Criteria and characteristics of successful operation**

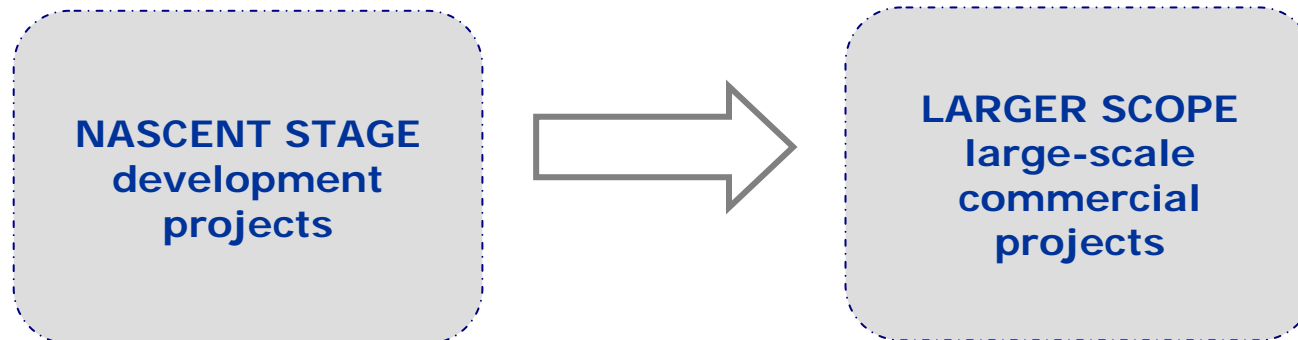
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## Favorable dynamics for jatropha

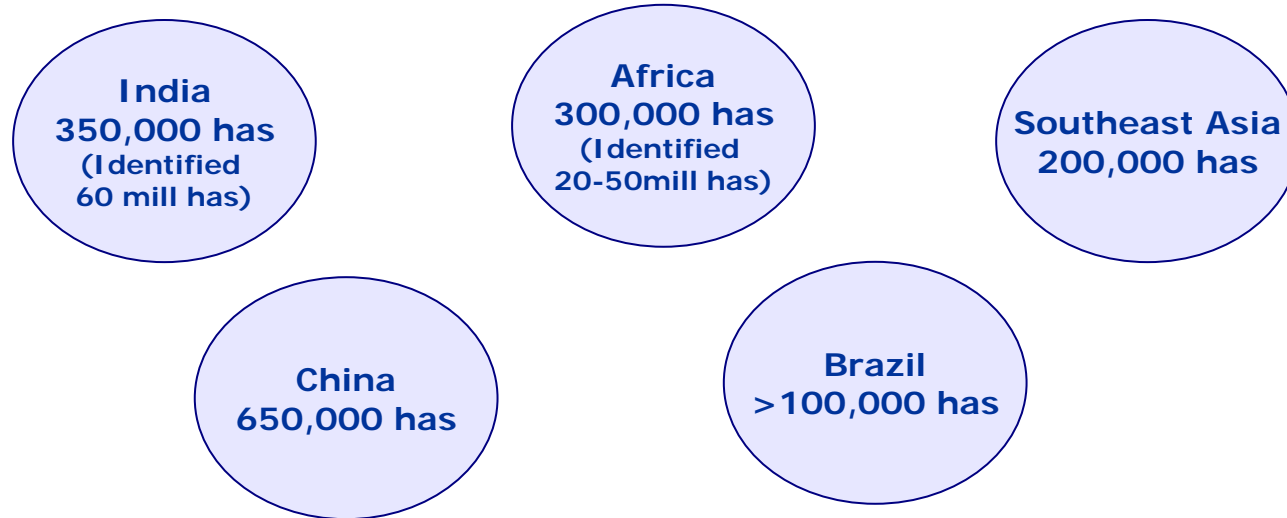
- **Non-food biofuel feedstocks on marginal land have sustainability advantages...**  
.... but must be balanced with limited use of water and fertilizer
- **Opportunities in the production of lower cost and alternative or high-yield feedstock**  
.... but must meet sustainability criteria..
- **Expansion of commercial-scale jatropha production from India into Africa, Southeast Asia and Latin America**
- **Participation by governments and energy majors in the cultivation and production of jatropha**
- **Jatropha-based projects are being developed as dual purpose entities-**
  - for government programs, and
  - for addressing rising global biofuels demand

## Strong support for jatropha plantations

- For economic development
- To alleviate concerns among larger biodiesel consumers worldwide related to:
  - Elevated feedstock cost
  - Security of feedstock supply
  - Food vs. fuel debate



## World Planted Area – Current plans



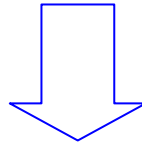
*Huge growth in jatropha plantations, but;*

- *How much oil is actually being produced? Where?*
- *At what total cost?*
- *Can the by-products provide sufficient revenues?*
- *Who can actually supply and at what price?*

Source: Thai jatropha

## The future and growth prospects

**Jatropha will play significant role as  
biofuel feedstock if;**



- **Planting is done in a sustainable manner with minimal resource use (land, water, fertilizer)**
- **Harvest problems are solved, e.g. cost & toxicity issues**
- **By-products are utilized for animal feed to keep oil costs competitive**
- **Projects are actually built and proven at a reasonable cost**
- **Logistics and transportation issues are resolved**
- **Sufficient scale can be achieved**

## Sustainable projects will attract capital

### Biofuels investments will be channeled

- 1) Upstream
- 2) To sustainable feedstock sources
- 3) To second generation projects

### If you meet common-sense objectives:

- 1) Don't use prime agricultural land for fuel crops that compete with food
- 2) Secure supply of low-cost feedstock from sustainable sources
- 3) Maximize life-cycle Co2 reductions
- 4) Pursue transport efficiency in feedstock sourcing and product delivery

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# Key selection criteria

**Critical**

## LOGISTICS

- Location
- Distance to crush plant, biodiesel plant and market for oil and meal
- Rail, road and shipping infrastructure

## PRODUCTIVITY/EFFICIENCY

- Soil fertility
- Water access, irrigation
- Species selection/seed availability
- Crush-and harvest technology
- Intercropping and silviculture
- Carbon credits prospects

## LAND SECURITY

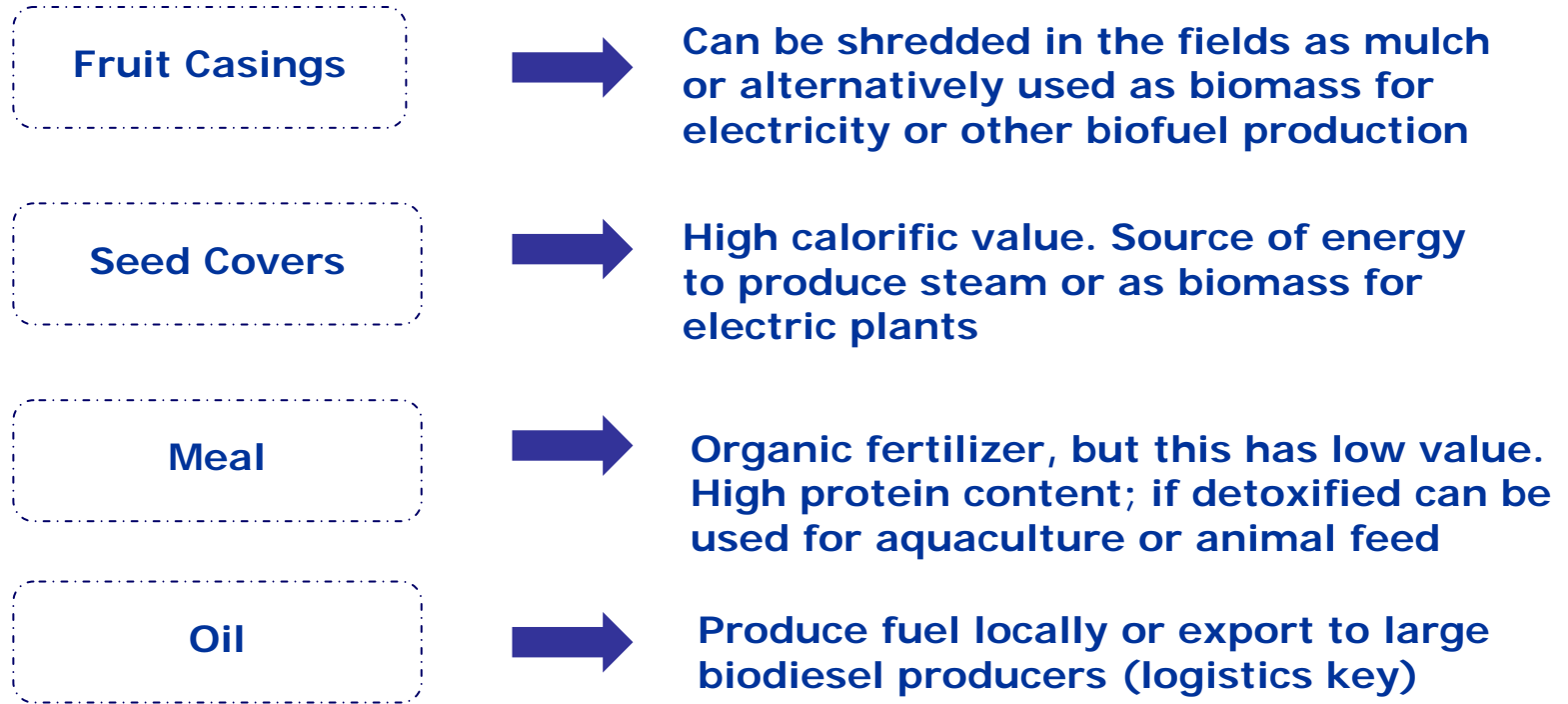
- Legal and permit status
- Long term lease and rent contracts
- Political and social dynamics/support

## SUSTAINABILITY AND SOCIAL ISSUES

## Key selection criteria

- **First consideration in looking at possible plantations**
  - Access to water rights - feasibility for irrigation
  - Permit requirements
  - Studies necessary to undertake planting
- **Cost of land/rent, yield expectations and location/logistics**
- **Species selection**
  - Seed Availability
  - Fertilization
  - Control of disease and pests
- **Intercropping and silviculture**
  - Secondary crops effects
- **Land status relative to earning carbon credits for tree planting**
- **Harvest plan, cost and feasibility of mechanization**
  - Value of labor in the region
  - Geographic contours of the land
  - Type of equipment
- **Crush technology and cost**

## Must optimize usage of biomass



*Identify markets for the entire biomass*  
*Investors want to see maximized returns and minimized waste*  
**OPTIMIZATION IS CRITICAL TO ECONOMIC SUSTAINABILITY**

## Conclusions

- **Jatropha can be the “future biofuels feedstock” (Goldman Sachs)**
  - **The main challenges are**
    - a) **logistics,**
    - b) **optimum usage of biomass and land area**
    - c) **achieve scale and sustainable, long term profitability**
    - d) **anticipate propaganda war and prepare answers/solutions**
  - **Lacking proven economic track record and rocky road to success**
  - **Talk is cheap ➡ execute and deliver!**
    - **Investors need answers as to when you will produce, how much oil and at what all-in-cost**
- ⇒ **OVERCOMING THESE CHALLENGES IS ESSENTIAL TO ACHIEVE GOOD RETURNS**
- ⇒ **PROJECTS THAT DO WILL ATTRACT CAPITAL**