

# A tale of two countries: Indonesia and India – how collaboration can promote sustainable biofuel production

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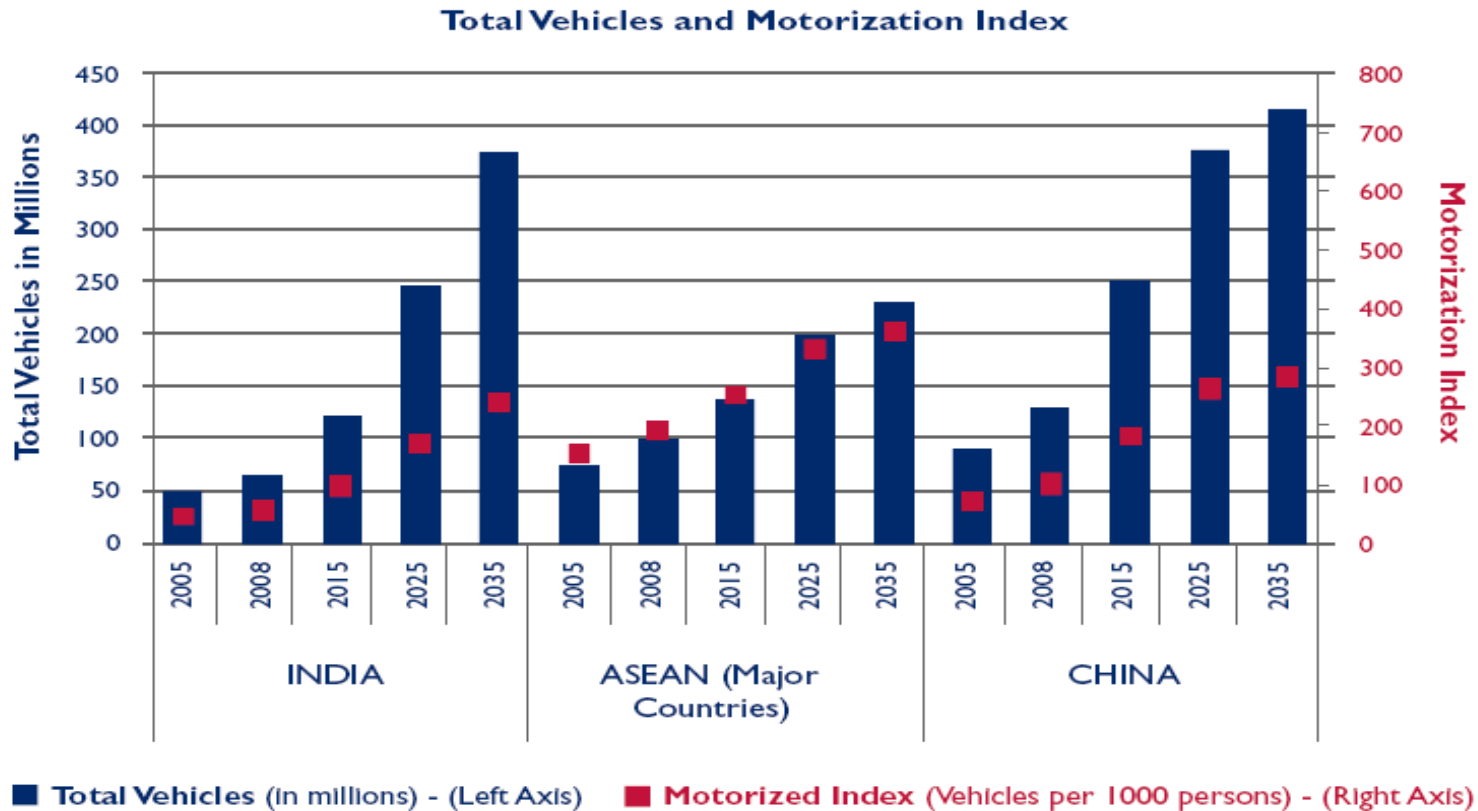
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# Outline

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- Overview of India and Indonesia biofuel plans – common grounds and more
- Realigning targets and realities
- Possible windows for South-South collaboration
  - Technology exchange
  - R&D networking
    - Feedstocks development
    - Biofuel processing and use
- Summary

# Why biofuels?



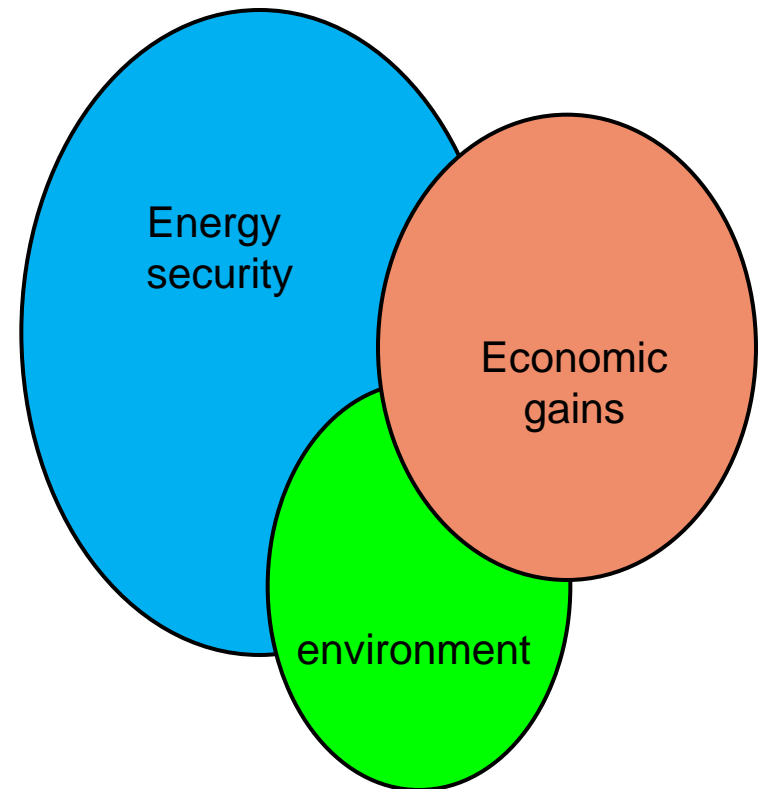
Source: Fabian, 2008

Biofuel is one of the few alternative sources of liquid fuels for transport use

# Main drivers of biofuel promotion

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- volatile fluctuation of oil prices amidst dwindling supply and increasing demand
- India imports 70% of fossil fuels
- Indonesia is now a net importer of oil and heavily subsidizes fossil fuels for use in transport and cooking
- money used to import fossil fuels could be redirected to revitalize the agriculture sector and promote rural development
- job creation expected as production of first-generation biofuels is labor intensive
- biofuels are cleaner alternatives to fossil fuels emitting less GHGs
- biofuel feedstocks can help afforestation



# Salient points of national biofuel policy

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## INDIA

- indicative 20% blending by 2017, both for biodiesel and bioethanol
- mandatory blending of 10% bioethanol in 20 states and 4 UTs effective October 2008
- biodiesel exempted from excise duty; concessional 16% excise duty for bioethanol
- minimum support price (MSP) for oil-seed farmers
- minimum purchase price (MPP) for bioethanol and biodiesel
- employment covered by NREGP

## INDONESIA

- liquid biofuels to meet at least 5% of domestic energy needs by 2025
- set blending mandates at 10% for biodiesel starting 2010, and 20% for bioethanol starting 2015
- B5 / E3 / E5 commercially available
- subsidize price difference with fossil fuels
- provide credit for bioenergy development and revitalization of plantation
- reduced taxes and VAT exemption
- provide budget stimulus for ESSV

Both countries expect participation of small-holding farmers in the biofuel program

# Realigning targets and realities

## INDONESIA

Target Jatropha plantation for 2010: 1.5 million ha

Blending target: B10 in 2010

Realization until April 2008: 121,200 ha



# Realigning targets and realities

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## INDIA

- Feedstock production to meet 20% blending in 2017
  - Target: ~10 million ha of wasteland to be planted with jatropha
  - Expected to generate ~ 5 million jobs
  - Actual cultivation: ~ 400,000 ha
  - Biodiesel blending not yet started
- E10 mandate effective October 2008 postponed due to surge in sugarcane costs
- E5 not even available nationwide

# Realigning targets and realities

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- Some factors why there's huge gap between target and actual figures in spite of government support and incentives
  - Marginal lands = marginal yields
  - Not enough research and data on new feedstocks like jatropha, cassava, sweet sorghum
  - Overestimation of feedstock production potential
    - Estimated 5 tons/ha/yr for jatropha for rain-fed condition
    - Actual results about 1-1.5 tons/ha/yr with drip irrigation
  - Farming best practices not yet established
  - Underestimation of feedstock price fluctuations
    - Very thin markets (except for oil palm and sugarcane)
  - Support facilities linking production to processing not yet established
  - Continuous struggle with sustainability issues
    - Land use conversion
    - Resource scarcity (water / land / fertilizer)
    - Food vs fuel

# Possible windows for collaboration

- Addressing technology, research and knowledge gaps
  - Joint R & D in feedstock improvement
  - Technology exchange especially in developing small scale processing facilities
  - Forming a network of researchers / practitioners to share ideas, trainings, experiences and best practices



# In summary

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- biofuels, notwithstanding the highlights on its possible negative impacts, have a role in many countries' renewable energy portfolios
- sustainable biofuel development could be implemented but it requires valid data to anchor the necessary policies to promote its development
- current national biofuel policies of India and Indonesia need fast-tracked R&D to ensure its feasibility and implementability
- South-South collaboration addressing technology / knowledge gaps will be beneficial to both countries
- IGES does not promote biofuels *per se*, we support sustainable production and utilization of biofuels and could be instrumental in fostering linkages among researchers, plant breeders and other practitioners in different countries that we work with

# Thank you for your attention

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