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# Social Impact Assessment of four rural bioenergy production models in India



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– development and early analysis

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CLUWRR



COMPETE & RE-Impact Side Event, 30<sup>th</sup> June 2009  
European Biomass Conference Hamburg

# Aims

- Develop and test a 'generic' SIA-based guidance tool for policy makers and practitioners to aid incorporation of social issues into the biofuels production program
- At the implementation level, provide learning to help identify positive and defray negative social impacts emerging from the introduction of bioenergy plantation projects



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# Social Impact Assessment

‘Identifying the future consequences of a current or proposed action which are related to individuals, organisations and social macro-systems’ (Becker, 2001)

RE-Impact SIA approach (drawing on Becker and Centre for Good Governance 2006) ensures:

- Informed development interventions that consider key relevant social issues (positive/negative, (in)direct and cumulative)
- Participation strategy for involving a wide range of stakeholders based on extensive scoping and testing in India:
  - States (communities, implementing agencies)
  - State / National level Ministries / Depts.
  - Research institutions
  - Private entrepreneurs
- Adaptive & flexible process



# 3-step methodology



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CARRIED OUT IN 2007/8

COMPLETED EARLY 2009

WORK UNDERWAY – FINISHED BY MID 2010

# Using the SIA methodology

- Focused on feedstock production stage impacts for 4 different interventions in India:
  - IOC-CREDA Joint Venture in Chhattisgarh (Govt.)
  - Mission Biofuels Pvt. Ltd. in Orissa (Private)
  - Ranidhera village Jatropha electrification scheme in Chhattisgarh (Private, NGO-led)
  - Reliance Life Sciences in Chhattisgarh (Private)
- Outputs: SH mapping (roles, risks and reqts); possible influence on social variables; and impact assessment for the 4 interventions



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# Firstly: Stakeholder Mapping

- Who are the SHs? Table:
  - Name/Organisation
  - (Potential) role in the project
  - Expected impacts from the project
  - Assumptions
- What resources do they bring?
- What do they expect in return (requirements)?
- How much influence do they have in setting
  - Project outcomes?
  - How these are achieved?
- How can the SHs be managed?
- Are there conflicts of interests between SHs?

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# SHs in Chhattisgarh Bioenergy

- 1) Winrock International India
- 2) Village Energy Committee
- 3) Marginal Farmers
- 4) State Government / CREDA
- 5) Kerosene Sellers
- 6) Panchayat Government
- 7) Indian Oil Corporation (private oil companies)
- 8) Landless Poor
- 9) Villages
- 10) National Government
- 11) NGOs
- 12) Biodiesel Production Companies (e.g. Biotech)
- 13) Local Consumers
- 14) National Consumers
- 15) Reliance
- 16) Mission Biofuels
- 17) Banks / Credit Agencies

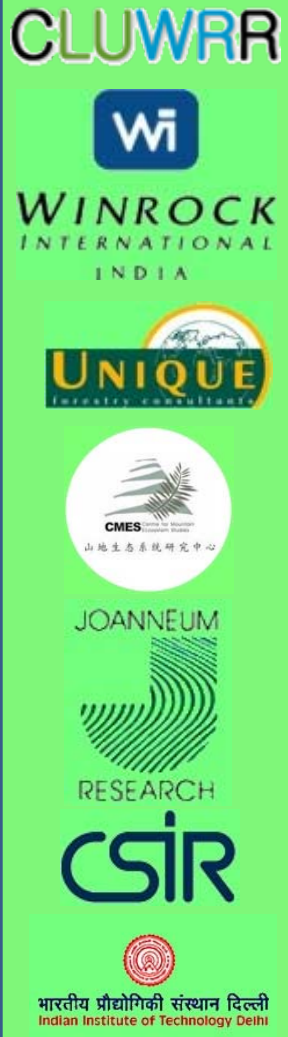
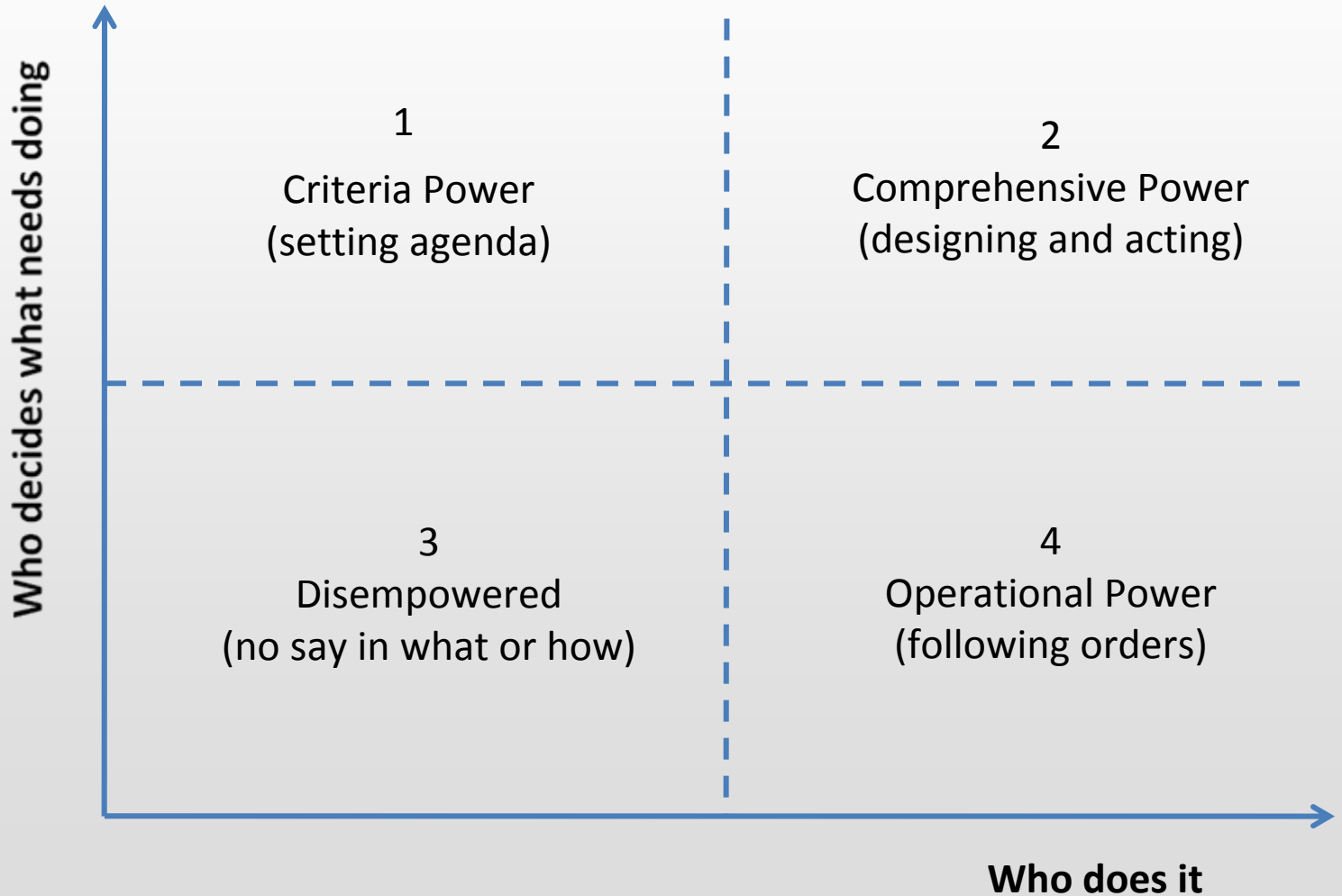
# SH requirements

- 1) Sustainable devpt, less marginalisation
- 2) Energy provision, profit
- 3) Livelihood opportunity/ diversity, profit
- 4) Sustainable devpt, less marginalisation, energy provision, votes
- 5) Profit, subsidies
- 6) Sustainable devpt, less marginalisation, energy provision, votes
- 7) Profit
- 8) Livelihood opportunity/ diversity
- 9) Livelihood opportunity/ diversity, profit
- 10) Sustainable devpt, less marginalisation, energy provision, votes
- 11) Sustainable devpt, less marginalisation
- 12) Profit, market access
- 13) Cheap, reliable energy supply
- 14) Cheap, reliable energy supply
- 15) CSR, profit
- 16) Profit, market access
- 17) Profit, meeting targets

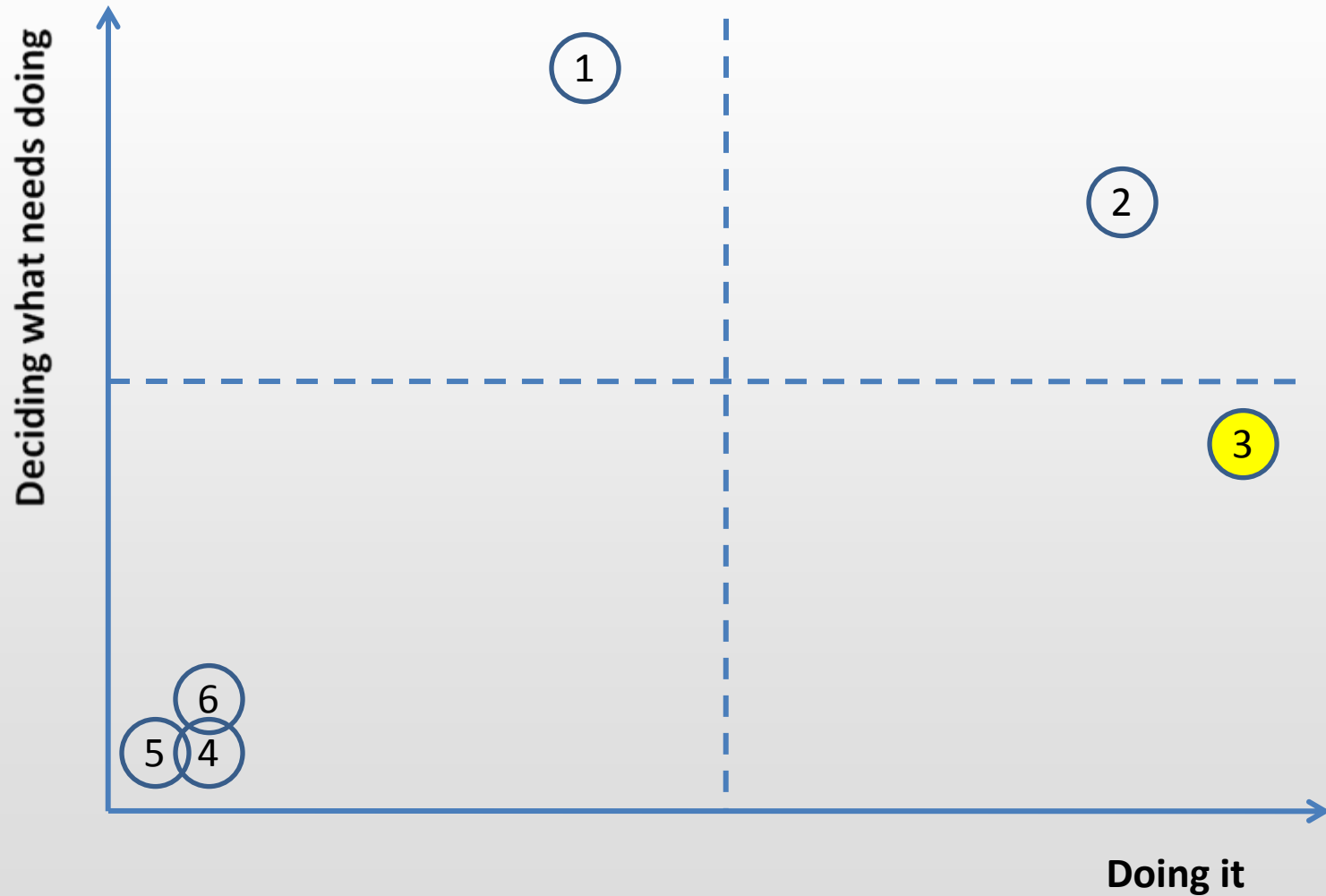




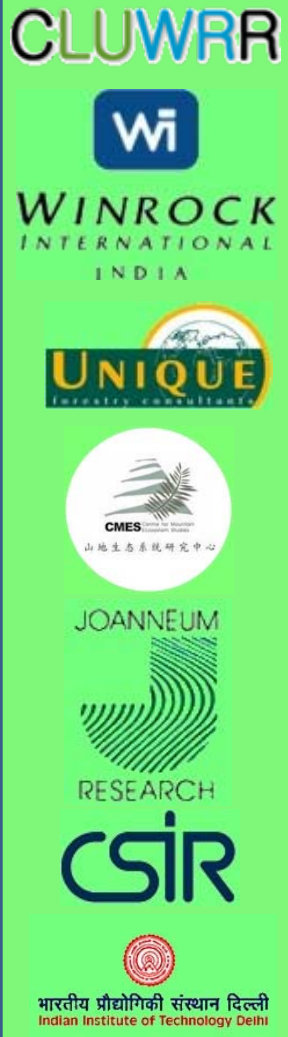
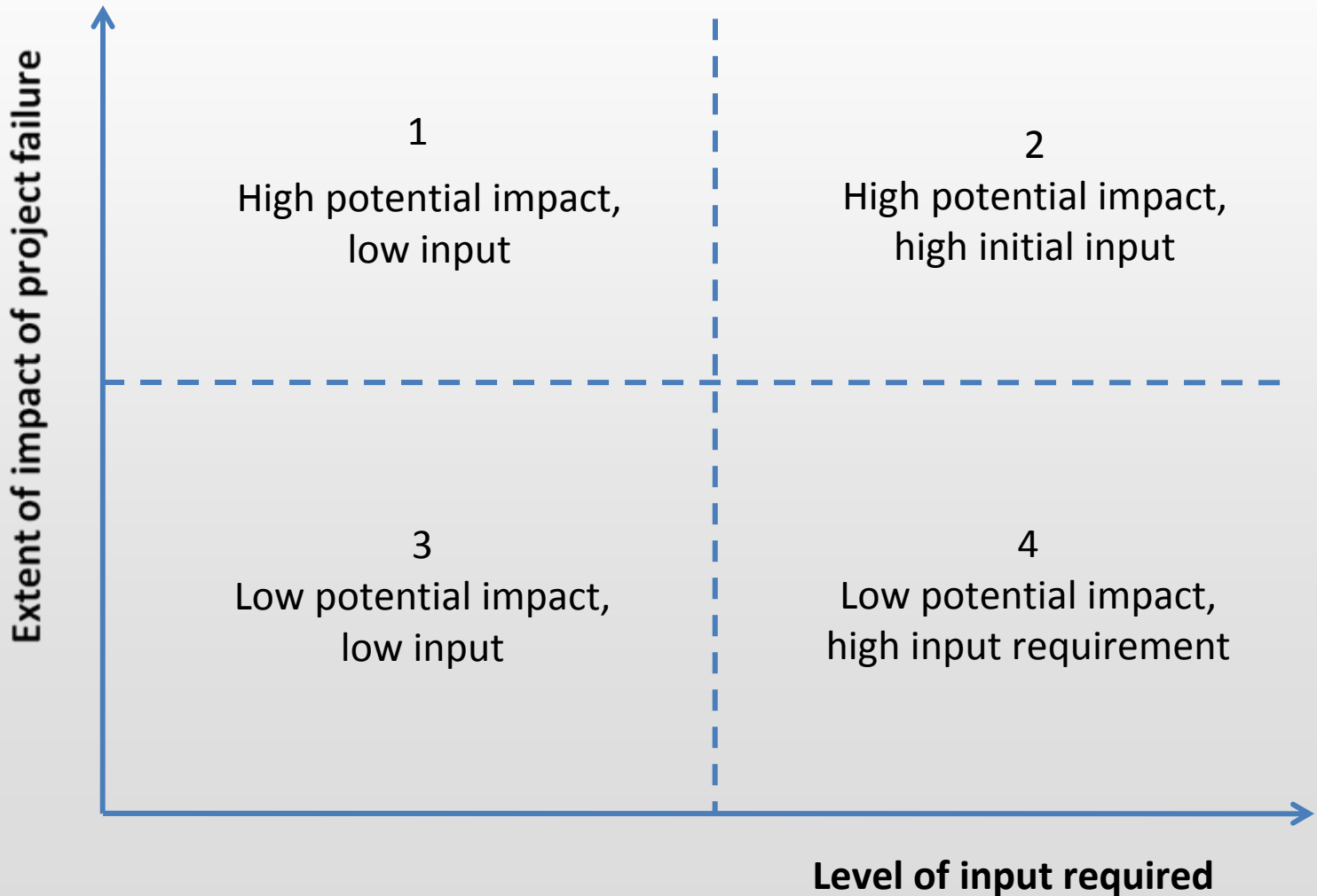
# Stakeholder Mapping - Roles



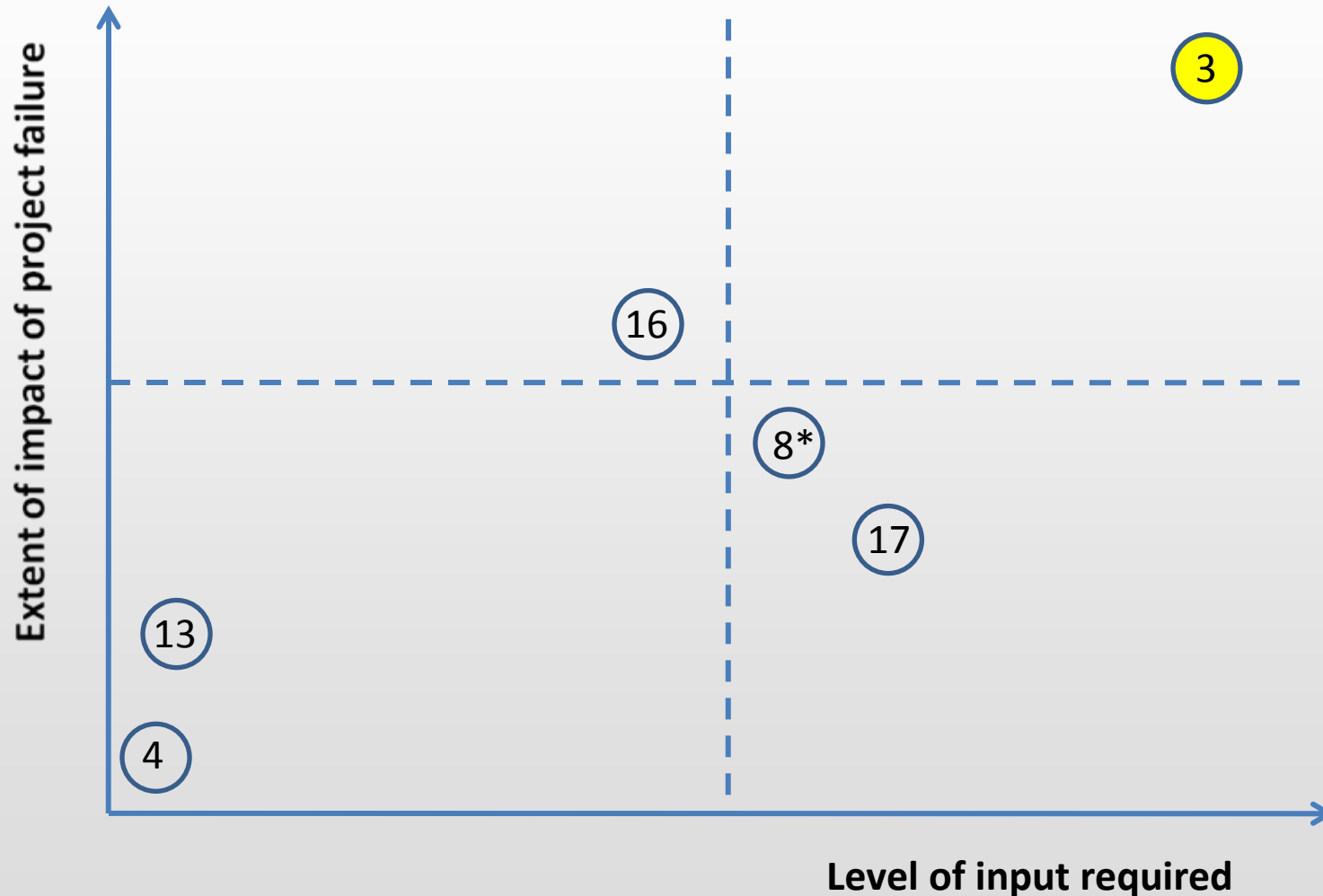
# Ranidhera SHs- Roles



# Stakeholder Mapping - Risks



# Contract Farming SHs- Risks

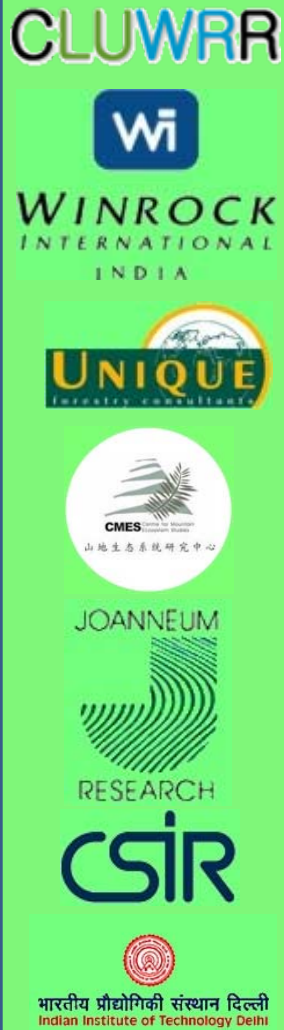


\* Job opportunities on the farms and with the company



# Influence on 5 social variables (IOC/CREDA)

Social Variables	Degree of Influence			
	High	Medium	Low	None
<b>Population change</b>				
Relocation of people (e.g. from encroachments)			✓	
Influx of labour – seasonal / permanent		✓		
Migration (outflow – seasonal / permanent)			✓	
<b>Community and institutional structures</b>				
Voluntary associations				✓
Employment / income opportunities		✓		
Industrial / commercial diversity	✓			
<b>Political and social resources</b>				
Varying SH interests & concerns accounted for			✓	
Local leadership development			✓	
Inter-organisational cooperation		✓		
<b>Community and family changes</b>				
Risk perceptions (e.g. crop loss / debt)		✓		
Trust in the political and implementing institution		✓		
Positive attitudes toward proposed action		✓		
<b>Community resources</b>				
Change in land use patterns	✓			
Labour displacement within the community		✓		
Displacement of food crops				✓



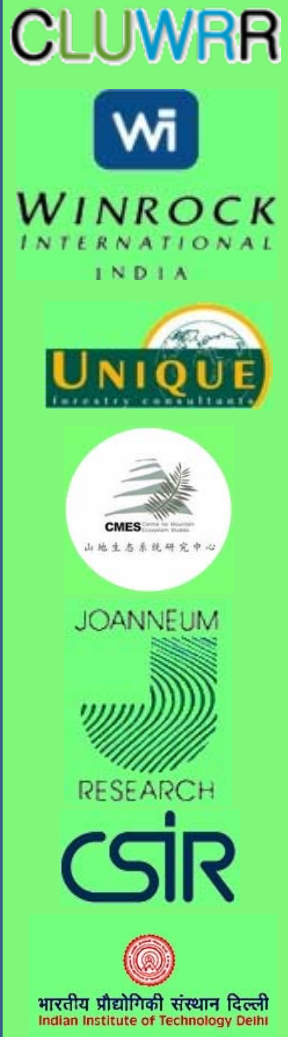
# Scenario Analysis summary – Reliance

Production Issues	Reliance model
Who has rights to purchase the produce?	Open market
Who gets access to by-products?	Farmer
Who sets the price for seeds?	Open market
What livelihood benefits are available to the poor/landless?	None
Who carries risk of crop failure?	Farmer, Reliance risk of not getting feedstock (2 <sup>nd</sup> ary)
Who carries risk if projected yields aren't realised?	Farmer, Reliance risk of not getting feedstock (2 <sup>nd</sup> ary)
Is there opportunity for vertical integration?	Possibility – farmers could be shareholders in processing plants
What ecosystem services are lost/gained?	-ve impact on grazing, +ve impact on soil condition, -ve impact on crop biodiversity, +/-ve impact on natural biodiversity (depending on previous use), -ve/neutral impact on water



# Assessment of potential impacts (IOC/CREDA)

Issues	Land ownership type (government / communal )	Potential Social Impacts		
		Direct	Indirect	Cumulative
Who owns the land?	Leased to private companies	<ul style="list-style-type: none"> <li>• Loss of informal rights</li> </ul>	<ul style="list-style-type: none"> <li>• Privatisation of common lands</li> </ul>	<ul style="list-style-type: none"> <li>• Potential inter and intra village conflicts</li> </ul>
Who makes plantation management decisions?	Agency selected by IOC	<ul style="list-style-type: none"> <li>• Communities not involved in decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Communities lose control over previously self managed lands</li> </ul>	<ul style="list-style-type: none"> <li>• Improved wasteland management</li> <li>• Reduced community role in management of waste/common lands</li> </ul>
Who manages the crops?	Agency selected by IOC			
Who sets the purchase price?	IOC – CREDA	<ul style="list-style-type: none"> <li>• (None, as communities not actively involved in the bio-energy value chain)</li> </ul>		<ul style="list-style-type: none"> <li>• Breaking down free market principle</li> </ul>
What livelihood benefits are available to poor/landless?	Employment opportunities	<ul style="list-style-type: none"> <li>• Locally available labour opportunities</li> <li>• Min wage as defined by local govt assured</li> <li>• Potential exploitation of poor / landless by hired agencies to maximise their own savings</li> </ul>	<ul style="list-style-type: none"> <li>• Labour hired from outside the area</li> <li>• Change in population characteristics in the area</li> </ul>	<ul style="list-style-type: none"> <li>• Income of poor / landless enhanced and secured to a greater degree</li> <li>• Increase in migration by local communities</li> </ul>
What ecosystem services are gained or lost?	<p><b>Lost:</b> grazing / fuelwood collection / usufruct collection</p> <p><b>Gained:</b> groundwater tapped / soil condition improved</p> <p><b>Unknown:</b> impact on water resources / biodiversity</p>	<ul style="list-style-type: none"> <li>• Access to water resources for agriculture</li> <li>• Over exploitation of groundwater if not usage not regulated</li> </ul>	<ul style="list-style-type: none"> <li>• Enhanced agriculture yields</li> <li>• Chemical agriculture intensification and corresponding pollution of water and soil resources</li> </ul>	<ul style="list-style-type: none"> <li>• Increased income from agriculture</li> <li>• Soil and water quality degraded</li> <li>• Potential of loss of biodiversity</li> </ul>



# To conclude

- Marginal farmers - high inputs and risks in the different models, but also opportunities
- Development needed to meet requirements (or we are just facilitating the status quo)
- Crop failure - greatest risk to all; R&D vital
- SHs wanting minimal –ve social, economic and environmental impacts need to push for political context that enables sector development whilst disseminating support / technical advice to assist farmers with decision making and agricultural management



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# So, what's next?

- Use the analyses of possible impacts to generate scenarios and optimise models to maximise positive and minimise negative risks (remembering SH requirements)
- Present the tool and findings at the International Biofuels Conference in Delhi in Feb 2010, and at following workshop in Chhattisgarh for local SHs – sharing best practice (both social & technical)



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# Thanks for your attention!

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