

Energy from Rice Straw

Project IED-IRRI/19951

Los Banos

27 March 2014



Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. Agree next steps and deliverables
5. Agree USES project indicators
6. Financial/administrative arrangements
7. Future meetings and activity





Recap of project


“This project will take rice straw ... And demonstrate the feasibility of converting it to a useful energy resource.”



Objectives

1. Socio-economic: To identify smallholder energy needs among irrigated rice farmers in S & SE Asia and find clean, economic and workable technologies and business models for meeting those needs using rice straw.
2. Environmental: To reduce greenhouse gas emissions and other pollutants from rice farming and energy use in S & SE Asia
3. To build capacity among the project research partners and empower scientific research institutions by sharing findings of this research





SUPERGEN Bioenergy Hub **Work Package 1: Feedstock** **(IRRI/Rres)**

1. National-level availability of straw for energy and competing uses
2. Analysis of the areas where focus group discussions are taking place
3. Feedstock supply logistics for different bioenergy plant sizes
4. Physical and chemical properties of straw, moisture content, ash, nutrient levels, silica
5. Variations in straw composition relevant to biological conversion
6. Densification options (bales, pellets, torrefaction, storage, pretreatment)



SUPERGEN Bioenergy Hub **Work Package 2: Techno- economics (IRRI/Ncl)**

1. Desk study – technologies/status
2. Interviews & workshop – examine obstacles to success
3. Revisit original work plans together
4. IRRI to write report from workshop distilling options
5. Ncl to test straw samples – AD & gasification
6. IRRI field trials



 **SUPERGEN Bioenergy Hub**
Work Package 3:

Environment/GHG (IRRI/Man)

1. Full LCA of proposed systems to evaluate GHG impacts
2. Compare savings from combustion/gasification/Ad options with base case
3. Analyze multiple criteria associated with trade-offs in an agreed framework



SUPERGEN Bioenergy Hub **Work Package 4: Social & institutional (IRRI/Man)**

1. Man/IRRI to devise appropriate questions for focus groups
2. Focus groups (farmers, householders, community leaders, millers, policy makers) among IRRI national partners
 1. Energy needs
 2. Socio-cultural attitudes towards straw use
 3. Technology preferences
 4. Business support requirements
3. Follow up interviews
 1. Feedback initial research to focus groups & gauge interest in trials/proof of concept



SUPERGEN Bioenergy Hub **Work Package 5:**

Dissemination (all)

1. Technical info – Rice Knowledge Bank
2. IRRC platform
3. Postharvest Learning Alliance – discuss, strategy, implement, share learning
4. Cereal System Initiative South Asia
5. Online manual for trainers
6. National & international media
7. Social networks
8. Websites
9. Project information for FAO IFES page

Overview for today

1. Recap of project objectives & work packages
2. **Focus on technical & non-technical barriers to rice straw-energy**
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. Agree next steps and deliverables
5. Agree USES project indicators
6. Financial/administrative arrangements
7. Future meetings and activity



Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. **Review of work packages to distill current status and review what can therefore be achieved in the project – synthesis/screening report**
4. Agree next steps and deliverables
5. Agree USES project indicators
6. Financial/administrative arrangements
7. Future meetings and activity



Questions for all WP's

1. What is current knowledge?
2. What are most significant challenges?
3. What can this project achieve?
4. What deliverables can this WP contribute?



Specific Discussion points

1. WP1 – What data exists on feedstock composition?
2. WP2 – How to share samples/data? (Ncl trials, Monish experience) Most sensible trials to execute? Technology preference?
3. WP3 – What LCA data exists e.g. field burning? What is LCA question? – determines scope/methodology
4. WP4 – Future energy demands/population/food production.
5. WP5 – Training for farmers, Share network, SGBH 2014 meeting on bioenergy in low income countries, skype presentation to SGBH researchers meeting March 2015





SUPERGEN Bioenergy Hub

What can be achieved?, Next Steps, Deliverables

1. WP1 – Feedstocks – Leigh/Nyugen
2. WP2 – techno-economics – Martin/Tony
3. WP3 – Env/GHG – Patricia/Rainer
4. WP4 – Social/institutional – Matt/Mirjam
5. WP5 – Dissemination - Craig

Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. **Agree next steps and deliverables**
5. Agree USES project indicators
6. Financial/administrative arrangements
7. Future meetings and activity



Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. Agree next steps and deliverables
5. **Agree USES project indicators**
6. Financial/administrative arrangements
7. Future meetings and activity



USES Project Indicators

IMPACT: Increased clean energy access, resilience and wealth creation for poor people in developing countries

OUTCOME: High quality research that improves our understanding of the opportunities and challenges associated with scaling up clean energy for development



USES Project Indicators

IMPACT: Increased clean energy access, resilience and wealth creation for poor people in developing countries – *no. Of beneficiaries in target communities & local businesses benefitting & better understanding of market potential for generation/supply/use*

OUTCOME: High quality research that improves our understanding of the opportunities and challenges associated with scaling up clean energy for development – *(1) no. regulations, guidelines informed by the work, (2) no. projects incorporating research findings, no. reports, outputs, papers*



USES Project Indicators

OUTPUT 1: Improved understanding of clean energy options and opportunities for developing countries

OUTPUT 2: Improved understanding of the social, market & political economy aspects of sustainable energy access for poor people



USES Project Indicators



OUTPUT 1: Improved understanding of clean energy options and opportunities for developing countries – *(1.1) no. Of freely available peer reviewed & policy outputs that reflect innovation & clean low carbon technologies*

OUTPUT 2: Improved understanding of the social, market & political economy aspects of sustainable energy access for poor people - *(2.1) no. Of peer reviewed papers & articles (2.2) no. Of seminars/events involving target groups*

USES Project Indicators

OUTPUT 3: Strengthened developing country research capacity on clean energy

OUTPUT 4: Improved access to practical and policy relevant knowledge on the challenges and opportunities for sustainable energy solutions in developing countries



USES Project Indicators

OUTPUT 3: Strengthened developing country research capacity on clean energy – (3.1) *no. Of seminars or events facilitated by southern institutes (3.2) no of junior researchers and project partners trained*

OUTPUT 4: Improved access to practical and policy relevant knowledge on the challenges and opportunities for sustainable energy solutions in developing countries (4.1) *no. Of publications in journals or other publications, (4.2) downloads from USES portal*



Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. Agree next steps and deliverables
5. Agree USES project indicators
6. **Financial/administrative arrangements**
7. Future meetings and activity



Overview for today

1. Recap of project objectives & work packages
2. Focus on technical & non-technical barriers to rice straw-energy
3. Review of work packages to distill current status and review what can therefore be achieved in the project
4. Agree next steps and deliverables
5. Agree USES project indicators
6. Financial/administrative arrangements
7. **Future meetings and activity**

