Improving milk supply, competitiveness and livelihoods in smallholder dairy chains in Indonesia

Inception Workshop – IPB International Convention Centre
Bogor, 17 November 2016

Ministry of Agriculture

Australian Government
Australian Centre for International Agricultural Research

THE UNIVERSITY of ADELAIDE

Overall goal of project

Overall goal of this project is to contribute to increasing milk supply (quantity and quality) by 25% by 2020 for at least 3,000 dairy producers in the geographic locations of West Java and North Sumatera

Objective - 2

Identify ***barriers to adoption*** of ***profitable management practices*** and ***farm business models*** and ***develop strategies*** to inform ***development of extension programs*** in West Java and North Sumatera

Objective 2: Identify barriers to adoption of profitable management practices and develop strategies to inform development of extension programs in West Java and North Sumatera

Research addressed for Objective 2 are:

- How and why **do rates of adoption of technology** and **management practices**, **herd health**, **input use, productivity** and **innovative marketing channels** differ between farmer segments?
- Are there **farmer** (e.g. knowledge and education, gender, perception and attitudes) and **farm household characteristics** (e.g. program participation, assets, size) that help explain differences allowing more effective strategies and programs to be develop?
- What are **barriers to adoption** and **drivers of adoption** of **profitable management practices** and **technology**?
- What are the most effective **"whole-of-chain"** strategies for overcoming barriers to adoption of profitable technology and management practices.

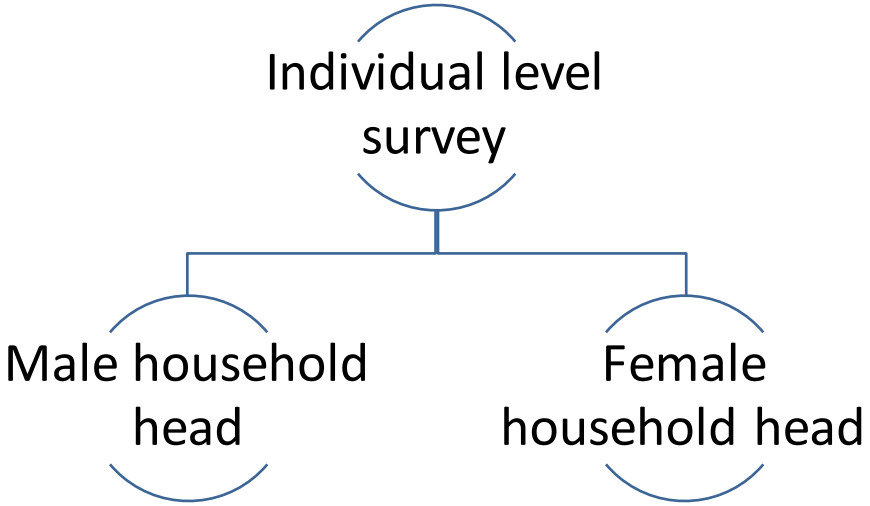
  - How can public and private stakeholders be engaged and work together to implement these strategies?

Key Words

1. Rates of adoption of technology and management practices
2. Herd health
3. Input use
4. Productivity
5. Innovative marketing channels
6. Farm and farmer characteristics
7. Barriers to adoption
8. Drivers of adoption
9. Value chain mapping
10. Profitable management practices and technology
11. Engagement with public and private stakeholders

Activity 2.1. Develop, conduct and analyse a baseline formal survey of a representative sample of dairy farming households in West Java and North Sumatera

Sampling Design



- **Target:** 700 hh where as 600 hh in West Java and 100 hh in North Sumatera
- **Tools:** a guideline-questionnaire and using a mobile acquired data (MAD) "CommCare" in data collection process (tablets).
- The initial questionnaire has been develop and used in the 2014 UofA Dairy Survey in Bogor, Sukabumi and Cisarua.
- **Due Date:** **August 2017**
- **Output :** **Indo Dairy** data set and field reports

Sections in 2014 Questionnaire

A	Household Characteristics	H2	Distance to places
B	Housing	I	Adoption of Technology and Management Practices
C	Assets	J	Information Sources
D1	Experience and Capital	K	Group Membership and Collective Action
D2	Access to Credit	L	Farmers' Attitudes
E1	Family and Hire Labour	M	Perceptions of Change
E2	Costs and expenses in the dairy business	N	Cash Income activities
F	Milk production, quality and consumption	O	Food Consumption
G	Sales and marketing of products from dairy farm	P	Non Food Expenditure
H1	Nutritional Aspects		

Variables in the literatures (technology adoption in dairy)

No	Keywords	Variables from literature	Questionnaire 2014
1	Rates of adoption of technology and management	Number of technology adopted	Section I
2	Herd management	Health	Not available – new sections
3	Input use	Used of improved breeds, herd size, credit, graze, total cost, used of concentrates	Section C,D,E,F
4	Productivity	Used of improved breeds, farm size, credit, total production cost, milk production (yield)	Section C,D,E,F
5	Innovative marketing channels	Milk sale, locations, mass media exposure, utilisation of communication sources, social participation, personal cosmopoliteness,	Section G, H, J,K
6	Barriers to adoption	Occupation, hh size, age, education, experience, marital status, sources of incomes, herd size, land, credit, distance, social participation	Section A,C,D,H
7	Drivers of adoption	Occupation, hh size, age, education, experience, marital status, sources of incomes, herd size, land, credit, distance, social participation	Section A,C,D,H
8	Value chain mapping		Not available / Focus group discussions
9	Profitable management practices and technology	Technology adoption, total production cost, training on dairy farming, knowledge on improved dairy husbandry,	Section E, I
10	Engagement of private and public stakeholders	Land, investment, credit, milk sale, distance, mass media exposure, social participation,	C,D,G,H,K,

Activity 2.2. Identify profitable management practices, business and extension models and use this information to develop strategies that will increase on-farm productivity

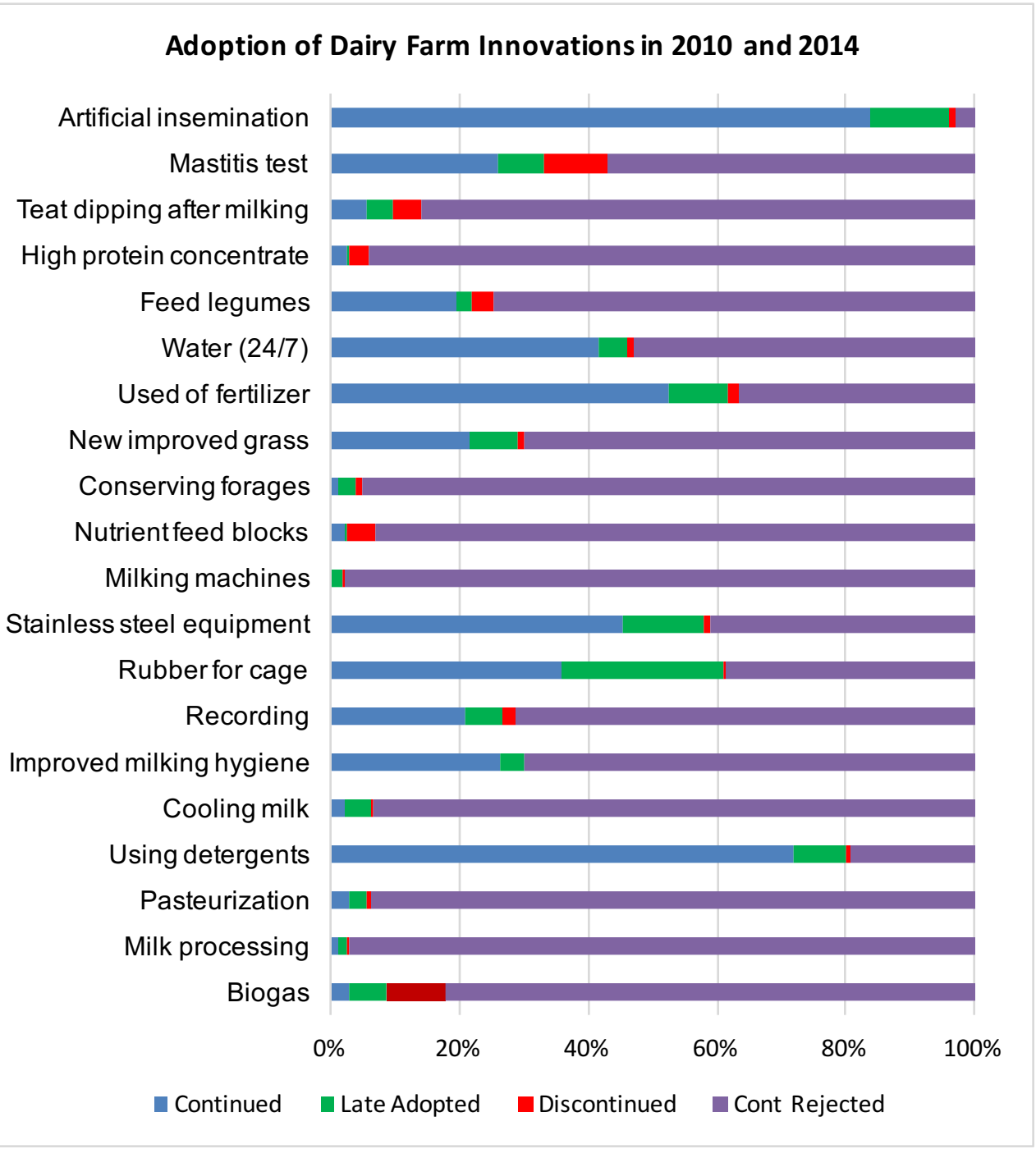
The output/milestones, to be able distinguished:

- The difference of determinant factors between farmer segments;
- The difference in access to government supports;
- Drivers and barriers to adoption of profitable management and technology;
- The change in production systems and farmers welfare over the project period;
- The most effective “whole of chain” strategies to overcoming barriers and the engagement of public and private stakeholders partnership to implement these strategies

Preliminary Findings from 2014 University of Adelaide – Dairy Farmer Survey in West Java

No	Innovations	No of farmers who have adopted in 2014
1	Artificial Insemination	96%
2	Using detergents for milking equipment	80%
3	Use of any fertilizers	62%
4	Rubber/plastic floor for the barn/cage	60%
5	Stainless steel milking equipment	58%
6	Water availability 24/7	46%
7	Mastitis Test	33%
8	Improved milking hygiene to reduce TPC	30%
9	Grow new improved grasses (high yield)	29%
10	Record keeping	26%
11	Feed legumes forages	22%
12	Teat dipping after milking	10%
13	Biogas units	9%
14	Cooling milk in water tanks	6%
15	Milk pasteurisation	5%
16	Conserving forages	4%
17	High protein concentrate	3%
18	Automatic milking machines	2%
19	Nutrient feed blocks	2%
20	Milk processing	2%

Total Sample:



Highlights

High adoptions (>50%)

- Artificial insemination
- Used of detergents for milking equipment
- Used of stainless steel

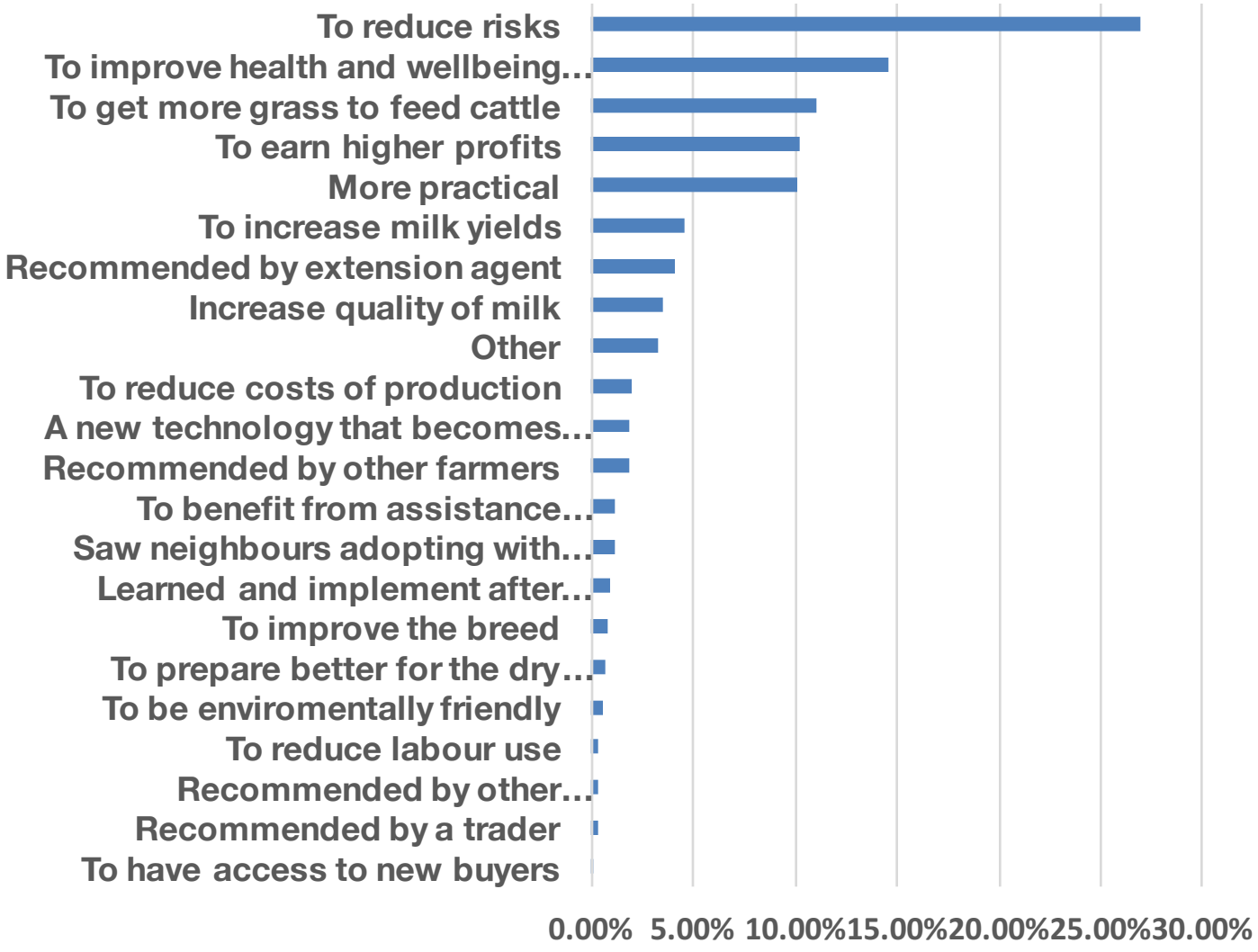
Medium adoptions (20-50%)

- Mastitis test
- Feed legumes
- Water availability
- Used of fertiliser
- Rubber for cage floor
- Recording
- Milk hygiene improvement
- Use of new improved grass

Low adoptions (<20%)

- High protein concentrate
- Value added innovation (pasteurization, milk processing)
- Forage technologies (feed blocks, conserving forages)
- Teat dipping after milking
- Cooling milk
- Biogas
- Automatic milking machines

Farmers' reasons to adopt the innovations



Farmers' reasons have not adopted or stopped using the innovations