Stakeholder Consultation Workshop

Beef

DFAT Aid
ACIAR Project AGB-2012-005
Collins-Higgins Consulting
Scott Waldron, Dianne Mayberry, Dahlanuddin, Marthen Mulik, Simon Quigley, Dennis Poppi

January 2014
Eastern Indonesia Agribusiness Development Opportunities (EI-ADO)

- Research commissioned by ACIAR, implemented by Collins Higgins Consulting and Indonesian partners

- EI-ADO project objectives:
  - Identify five commodity value chains linked to NTB, NTT and East Java with most potential to increase income of poor farmers
  - Identify opportunities and interventions with most potential for improving the efficiency, competitiveness and income of poor farmers

- Information and recommendations from EI-ADO study to inform DFAT in the design of the Australia Indonesia Partnership for Decentralisation – Rural Economic Development Program (AIPD-Rural).
  - $112 million DFAT funded development program targeting Eastern Indonesian
AIPD-Rural

• **Goal:** Increase the net income of 1 million poor male and female farmers by at least 30% by 2022 (300,000 of which should be reached by 2017)

• **Objective:** to increase the competitiveness of poor male and female farmers

• **Strategy:** address the “systematic” constraints of the agricultural sectors that are important to the poor in selected districts

• **Outcomes:**
  – Improved farm practices
  – Increased access to input and markets
  – An improved sub-national business enabling environment

• **Approach:** Market Development or M4P
**El-ADO Methodology**

- Initial identification of 32 commodities
- Reference Group selected down to 16 commodities
- 16 commodity literature reviews preformed
- Provincial and Reference Group consultation for commodity prioritization
- Identification of 5 priority commodities for detailed value chain studies.

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<tbody>
<tr>
<td>1.</td>
<td>Beef</td>
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<td>2.</td>
<td>Legumes</td>
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<td>Mango</td>
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<td>4.</td>
<td>Maize</td>
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<td>5.</td>
<td>Vegetables</td>
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Commodity Prioritisation

Commodities with most potential to increase income of the poor

[Diagram showing weighted scores of different commodities, with Seaweed and Fishery highlighted.]
Beef Presentation
# Project Approach

## Beef value chain team

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Fieldwork areas</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dianne Mayberry</td>
<td>Commodity Specialist</td>
<td>East Java.</td>
<td>University of Queensland,</td>
</tr>
<tr>
<td>Teddy Kristedi</td>
<td>Commodity, value chain and fieldwork expertise</td>
<td>East Java</td>
<td>ACIAR</td>
</tr>
<tr>
<td>Dahlanuddin</td>
<td>Commodity Specialist</td>
<td>NTB</td>
<td>University of Mataram</td>
</tr>
<tr>
<td>Marthen Mulik</td>
<td>Commodity Specialist</td>
<td>NTT</td>
<td>University of Cendana</td>
</tr>
<tr>
<td>Scott Waldron</td>
<td>Value Chain Specialist, Team leader</td>
<td>All areas</td>
<td>University of Queensland</td>
</tr>
<tr>
<td>Simon Quigley &amp; Dennis Poppi</td>
<td>Commodity Specialists</td>
<td>No fieldwork</td>
<td>University of Queensland</td>
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</tbody>
</table>
Project Approach

Methods

- M4P framework, AusAID intervention guidelines
- Extensive literature, statistical and policy reviews
- Fieldwork 32 days, 68 interviews
- Technical input within and outside team, several reviews & iterations on report

Output

- Detailed report on virtually all aspects of the EI beef industry
  - Can’t cover much of report toady
- Interventions identified for PRISMA
  - Focus for today

Limits

- Limited fieldwork, only in EI
- Intervention information developed – on project parameters & analysis of chain structures
  - Not business models / plans developed with potential partners
Cattle Distribution and Density

Cattle map
1 dot = 5,000 head
Source PSPK, 2011 bovine census

Fieldwork
Breeds and densities of cattle
Weather and crops
Scale of production
Comparative advantage
Trade
Major Interests in the Beef Sector

Major interest in the beef sector is from domestic and international agencies
Quadrant Graphs from 2012 Consultations
Estimated Employment in Beef – EJ, NTB, NTT

- 1.55 million cattle producers
- 15,000 cattle traders
- 19,000 in slaughter sector
- 7,000 beef stallholders in wet markets
- Total of 1.6 million people (approx. 80% in EJ)
- Excluding input providers (vets, AI agents, extension staff), feed growers and traders, cattle brokers, transport operators, beef processors, beef and by-product traders etc.

*Cattle play important livelihood roles
Chain actors can be low income, landless, women …*
Productivity

Cattle production thought to be inefficient & uncommercialised

For example - slaughter rates

East Java – 11%
NTB – 8%
NTT – 5%

Compared to

Indonesia – 15%
SE Asia – 14%
World – 21%
Australia – 31%

So sector thought to have high potential for productivity gains & commercialisation
Demand - Consumption

Current low consumption (1.3+kgs per capita). But beef has established place in diet.

Growth in demand expected due to:
- Population growth - 1% p.a
- Urbanisation - 1.7% p.a
- Incomes (+ve expenditure elasticities for beef)

So…
- Macro settings…. suggest high potential for poverty reduction and market development
- But ..... how does this play out
  - At household level?
  - Within value chains?
Collins Higgins Consulting

Problem Tree for Ongole, Brahman and Euro-X cattle production in EJ

- Poor understanding of feed requirements
- Inadequate resources (labour, land/feed, capital)
- Under-utilisation of available land for forages
- Non-strategic feeding (crop residues & forages)
- Poor feed quality (not enough protein or energy)
- Late weaning of calf
- Poor oestrous detection
- Poor AI service (availability, quality)
- Poor access to bull
- Low milk production
- Poor cow nutrition
- Calf mortality
- Long post partum anoestrous
- Long inter-calving interval
- Low calving %
- Low weaning %
- Poor mating management
- High services per conception
- Extended fattening period
- Low growth rates (heifers)
- Low growth rates (weaners & bulls)
- Low calf growth rates
- Reduced income from fattening
- Delayed onset of puberty
- Inadequate resources (labour, land/feed, capital)
- Non-strategic feeding (crop residues & forages)
- Poor feed quality (not enough protein or energy)
- Long post partum anoestrous
- Poor oestrous detection
- Poor AI service (availability, quality)
- Poor access to bull
- Less calves sold/hh/year
- Increased cost per calf
• Improved oestrus detection and access to bulls or AI services
• Increased production or utilisation of feeds (residues, tree forages, grasses)
• Strategic allocation of feeds
  – Lower quality maintenance requirements of dry cows
  – Higher quality feed for cows at calving and lactation
• Early weaning and feeding of calves
• This leads to
  – Puberty at a younger age
  – Higher physiological growth potential / growth rates at later stages
  – Reduced sales age, increased turnoff rates and revenues
• Weaning pens, pen sanitation and the composting of animal waste
## Budget Analysis – Smallholder Cattle Production System

### Productivity scenario

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<tr>
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<th>Low</th>
<th>Higher</th>
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<tbody>
<tr>
<td>Straw (% body weight)</td>
<td>1.7</td>
<td>1.5</td>
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<tr>
<td>Forage (% body weight)</td>
<td>0.3</td>
<td>1 + bran supplement</td>
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<tr>
<td>Mortality (%)</td>
<td>5</td>
<td>0</td>
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<tr>
<td>Av. weight cow (kgs LW)</td>
<td>280</td>
<td>305</td>
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<tr>
<td>Calving (%)</td>
<td>40</td>
<td>60</td>
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<tr>
<td>Weaning age (month)</td>
<td>7</td>
<td>5.5</td>
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<tr>
<td>Weaning weight (kgs)</td>
<td>90</td>
<td>109</td>
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<tr>
<td>Liveweight gain (kg/hd/day)</td>
<td>0.3</td>
<td>0.4</td>
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</tbody>
</table>

### System
- **Upland East Java (Malang)**
- 2 crops/year (rice, corn), forages on bunds
- 2 Ongole cows, Al’d
- Grow calves to slaughter (30mo), Rp24,000/kg LW

### Under 2 productivity scenarios
Systematic Change at Household Level

• Change appears feasible
  – Well-understood & simple management changes / packages
  – Economic incentives in place for uptake

• But is not straightforward
• There are no single ‘technical fixes’
  – An integrated suite of management changes are required

• Cattle management embedded in cultural “outlooks”
  – Cattle held as source of “savings”
  – A more target-driven approach required (profit / productivity)
  – For more progressive produces

• Long-term, repetitive capacity-building required, but not currently delivered through
  – Extension system, many government programs or the agribusiness sector
Approaches to Facilitating Change

- **“Bottom-up” approach**
  - On-farm Indonesian programs, ACIAR, IndoBeef groups etc.
  - Within particular research and project groups

- **“Top-down” approach (PRISMA)**
  - Off-farm drivers of change & commercialisation
  - Source of dissemination & scale – catchment areas of buyers

- Synergies between these
‘Top-Down’, ‘Lead-Firm’ PRISMA Approach

- Linkages between agribusiness actors & farmers
- To generate embedded services, target-driven production systems, access to finance etc.

- Search for partners, intermediaries, targets
- With mutual incentives to work together
- Within context of industry structures, settings, dynamics
Beef Value Chain of Eastern Indonesia

- Flows & structures
- Supply chain – efficiencies & inefficiencies
- vs value chain
- Location and type of lead firms in chains
Common Interests of Agribusiness and Producers (general)

- For input providers (AI agents and feed traders)
  - Expand markets and sales
- For cattle buyers (traders, butchers, feedlots, cattle marketing companies)
  - Access to cattle to specification
  - Communicate preferences more directly with producers (lot size, breed, weight, height, timing and pricing etc)
  - Reduce purchase, aggregation, holding costs
- For producers
  - Facilitate more target-driven & commercialised production / management systems
  - Technical advice, services, finance/backing
  - Potential for modest price premiums

For industry and rural development
- Dissemination of linkages and practices – in catchment areas of input providers & cattle buyers (can be large)
## Cattle Distribution Programs

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<thead>
<tr>
<th>Scheme</th>
<th>Partners</th>
<th>Terms</th>
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<tr>
<td><strong>Government schemes</strong></td>
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<tr>
<td>SMD (Graduates Building the Village)</td>
<td>• University graduate assigned to village or kelompok</td>
<td>• Rp300 mil allocated to group&lt;br&gt;• Return 2 calves, then own cow</td>
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<tr>
<td></td>
<td>• Salary for the first year, then self-funding</td>
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<td>Kopel (sub-district extension system)</td>
<td>• Central government through bupatii&lt;br&gt;• Sub-district extension agent</td>
<td>• ST - return 9 calves over 5 years&lt;br&gt;Or 3 calves in 5 years</td>
</tr>
<tr>
<td>PPDKP (Breeding livestock development in regions)</td>
<td>• Centrally funded&lt;br&gt;• Supervision of Dinas</td>
<td>• Grant – but can’t sell cow</td>
</tr>
<tr>
<td>BSS (land of one million cattle (NTB))</td>
<td>• Provincial funding&lt;br&gt;• No facilitator</td>
<td>• Similar to SMD</td>
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<tr>
<td>And another 9 ministries and government departments!</td>
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<tr>
<td><strong>Community/religious/NGO schemes</strong></td>
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<tr>
<td>BLM (Direct Community Assistance)</td>
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<td>• Return 2 calves in 5 years</td>
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<tr>
<td>LM3 (independent public institutions entrenched in the community) (NTT)</td>
<td>• No facilitator</td>
<td>• Rp300 mil per group&lt;br&gt;• Based on diversified, complementary commodities</td>
</tr>
<tr>
<td><strong>Corporate schemes</strong></td>
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<tr>
<td>Pertamina, State Oil and Natural Gas Mining Company</td>
<td>• Pertamina, Gadja Mada, Ministry for Less Developed Regions&lt;br&gt;• Sub-district Technical Services Department on ground support</td>
<td>• Bima&lt;br&gt;• Set up for cattle production and biogas.</td>
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</tbody>
</table>

- Cattle ‘rescue’ and re-distribution programs
- For at least 1,000 groups between 2010 and 2012
- Especially NTB & NTT
- Cannot be avoided in any sector program
- May be benefits in developing linkages
Indonesia Imports – All Sources
Weekly Beef Prices in Jakarta

The graph shows the weekly beef prices in Jakarta from January 2009 to December 2012. The data is represented by lines for each year:

- Green line: 2009
- Purple line: 2010
- Blue line: 2011
- Orange line: 2012

The prices fluctuate throughout the year, with some weeks showing higher prices than others. For example, there is a notable increase in prices around the second quarter of 2012.
Implications

• Increased competition for slaughter and breeder cattle in EI.
• Results in:
  – Upward pressure on cattle prices
  – Increased difficulty for cattle buyers (butcher, traders, feedlots) to secure cattle to specification at prices that enable viability
  – Greater domestic trade flows (also subject to local quota and disease restrictions)
• Favourable conditions in which to conduct a beef project
• However, policy measures are to / will be wound back
  – Price corrections can be expected
  – Some traders, butchers and feedlots in EJ will switch back to imported cattle
• However, the fundamentals of (constrained) supply and (growing) demand for beef in Indonesia will remain
• Still D for local cattle
# Beef Value Chain Fieldwork Summary – Oct/Nov 2012

<table>
<thead>
<tr>
<th>Input Supplier</th>
<th>Banks</th>
<th>Port / holding yards</th>
<th>Government</th>
<th>Farmers / farmers groups</th>
<th>Feedlots</th>
<th>Nucleus-plasma</th>
<th>Traders</th>
<th>Markets</th>
<th>Slaughter</th>
<th>Retail</th>
<th>Assoc / NGO</th>
<th>Total</th>
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<td><strong>East Java</strong></td>
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<td>7</td>
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</table>
Production Statistics and Policies

Cattle numbers (left axis)
Cattle slaughter (left axis)
Cattle meat production (right axis)

IFAD/ADB cattle projects
Asian Financial Crisis
Decentralisation program
Bovine census (PSPK)
Increased trade restrictions
1st beef self-sufficiency program
2nd beef self-sufficiency program
Current beef self-sufficiency program

Cattle and slaughter numbers (million head)
Cattle meat production (kilotonnes)
Demand

Annual per capita meat consumption (kg)
Source: SUSENAS

Daily per capita protein consumption (g)
Source: SUSENAS
Inflation, Beef and Chicken Meat Prices
Selected Cities, 2001 - 2012

[Graph showing the price trends of beef and chicken meat in selected cities over the years 2001-2012.]
Incentives of Agribusiness to Participate

- Few / weak linkages or services now. So why would this change?
- On the inputs side, AI agents and feed traders:
  - Improved breeding and feeding practices can increase their market and returns
  - Success rates of AI can be increased if suppliers (breed centres and their agents) work more closely with producers for timely oestrus detection and service delivery.
  - Feed traders can expand their markets if they participate in feed training programs with project fattening groups and households, and disseminate advice and training to other non-project groups and actors.
• Cattle buyers (traders, butchers, feedlots, cattle marketing companies)
  – In “open” markets (weak linkages) have few costs in providing services etc.
  – But incur high search, aggregation and holding costs to put together consignments of cattle to specification. In some cases cannot access sufficient supply to meet orders
  – Links with progressive cattle producers & groups reduces costs and increases continuity for the buyers
    – ESPECIALLY IN CURRENT MARKET OF TIGHT SUPPLY
### Pros/cons of Coordinating with Existing Programs

<table>
<thead>
<tr>
<th><strong>Upside</strong></th>
<th><strong>Downside</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large numbers of cattle, groups and households</td>
<td>Handouts, government property, household ownership / responsibility, period until ownership, sell cows / reneg</td>
</tr>
<tr>
<td>On the ground staff in some schemes, or technical support from extension system</td>
<td>Can be weak</td>
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<tr>
<td>Necessarily involves groups</td>
<td>Groups are [empty] formed for scheme</td>
</tr>
<tr>
<td>Potential for improvement in production systems, and downstream activities / marketing</td>
<td>Can be poorly integrated into farming systems</td>
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<td>Risks that the schemes will stop</td>
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<td>Complications of working in existing / government schemes</td>
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</tbody>
</table>
Integration of Farmers into the Value Chain

Weak linkages

- Participation of farmers in markets??
- Information on markets, prices, preferences
- Feedback from downstream (traders, butchers)
- Services (traders, official extension)
- Knowledge of attributes & value of cattle
- Even programs (cattle distribution)

But there are some exceptions!
Weak Linkages of Agribusiness with Farmers

- Input suppliers no incentives to provide embedded services to farmers
- Few feedlots in EJ – weak backward links
- Slaughterhouses no incentive – service kill plants
- Traders and butchers buy on open market, through networks, few formal linkages
- With some exceptions!!
- To develop and build into program
# Production Systems

<table>
<thead>
<tr>
<th>Intensity of crop-livestock systems</th>
<th>Wet tropics</th>
<th>Dry tropics</th>
<th>Enterprise mix</th>
<th>Scale</th>
<th>Land</th>
<th>Breeds</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fieldwork site</td>
<td>Lowland Ej</td>
<td>Upland Ej</td>
<td>Intensive NTB</td>
<td>Extensive NTB</td>
<td>Semi-intensive NTB, NTT</td>
<td>Extensive NTT</td>
<td>Feeds</td>
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<td>East Java</td>
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<td><strong>Intensive</strong></td>
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## Cattle

<table>
<thead>
<tr>
<th></th>
<th>Indonesia</th>
<th>Java</th>
<th>Sumatra</th>
<th>Bali, NTB, NTT</th>
<th>Kalimantan</th>
<th>Sulawesi</th>
<th>Maluku and Papua</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total cattle</strong> (mil. head)</td>
<td>14.8</td>
<td>7.5</td>
<td>2.7</td>
<td>2.1</td>
<td>0.4</td>
<td>1.8</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>% of national herd</strong></td>
<td>100</td>
<td>51</td>
<td>18</td>
<td>14</td>
<td>3</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Compound av ann. Growth 2003-11 (%)</td>
<td>5.3</td>
<td>3.9</td>
<td>9.7</td>
<td>5</td>
<td>4.9</td>
<td>7.8</td>
<td>4.8</td>
</tr>
</tbody>
</table>

### Breed composition (% of herd)

- **Bali**
  - Indonesia: 32
  - Java: 3
  - Sumatra: 25
  - Bali, NTB, NTT: 95
  - Kalimantan: 63
  - Sulawesi: 79
  - Maluku and Papua: 83

- **Ongole**
  - Indonesia: 29
  - Java: 42
  - Sumatra: 29
  - Bali, NTB, NTT: 4
  - Kalimantan: 11
  - Sulawesi: 8
  - Maluku and Papua: 14

- **Madura**
  - Indonesia: 9
  - Java: 16
  - Sumatra: 2
  - Bali, N TB, NTT: 1
  - Kalimantan: 12
  - Sulawesi: 0
  - Maluku and Papua: 2

- **Other**
  - Indonesia: 30
  - Java: 40
  - Sumatra: 44
  - Bali, N TB, NTT: 0
  - Kalimantan: 14
  - Sulawesi: 12
  - Maluku and Papua: 1

### Sex

- **% females in herd**
  - Indonesia: 68
  - Java: 68
  - Sumatra: 68
  - Bali, N TB, NTT: 67
  - Kalimantan: 64
  - Sulawesi: 71
  - Maluku and Papua: 67

*Source: 2003 Ag Census, 2011 Bovine Census*
Eastern Indonesia Cattle Programs

- Cattle distributions schemes
- Village Breeding Centres
- Ranches??
- Groups
- Finance schemes (KUPS & KKPE)
Village Breeding Centres

- Distribute cattle, including breeding stock
- Can be on the ground staff (SMD)
- Record production
- Grade breeders
- Redistribute to for breed improvement
Intervention Recommendations
Intervention Identification

- Numerous potential interventions rejected
  - Not discussed here
  - See Beef Value Chain Report (2013) “SWOT” and “areas for further research”
- Promising potential interventions outlined
  - Based on project parameters
  - As concepts with supporting rationale
  - Specific business models / plans not yet discussed with potential partners
- A further round of sharpening and culling required
- To build business models and to negotiate with potential partners
Seven (7) interventions identified

Inputs
1. AI in East Java
2. Feed traders and cattle fatteners in East Java

Outputs (cattle buyers)
3. Contract fattening in East Java
4. Feeder cattle for feedlots in East Java
5. Slaughter cattle for butchers in Eastern Indonesia
6. Breeder cattle for inter-regional traders in Lombok
7. Slaughter cattle for cattle marketing agencies in West Timor
Interventions in the Inputs Sector

AI agents and feed traders have incentives to participate

- Improved breeding and feeding practices by producers can increase market, sales and returns of the input providers
- Breed centres and AI agents can increase services/fees by working more closely with producers for timely oestrus detection and service delivery
- Feed traders can expand their markets if fattening groups and households improve feeding practices, more evenly over the year
Intervention 1: AI in East Java

Practice change

• Genetic improvement / genotype not the focus – but may play a role in package of reproductive interventions

• The focus is on timely delivery of genetic material

• Function of:
  – Accurate oestrus detection by farmers
  – Farmer communication with AI agents to provide service within oestrus period
  – If not, leads to extended calving intervals

• Household returns sensitive to calving intervals
  – If pregnancy can be bought forward by one oestrus cycle (av 21 days), increases annual calving percentages by 5.8% and gross returns from cattle by 14.3%
Intervention 1: AI in East Java

Delivery model

• Partners - Singosari national breeding centre, Dinas Livestock
• Intermediaries – network of AI agents that deliver services. Many dozens in each district of EJ
• Target - cattle producers that use AI
Intervention 1: AI in East Java

PRISMA role in facilitating

- Closer working relationships between local AI agents and cattle groups in EJ
- Training of AI administrators, technicians and agents in AI delivery, establishment of QA protocols for semen storage, handling, delivery
- Training of agents in broader animal husbandry practices that effect oestrus (nutrition, BCS, weaning), and the development of resources (training material, exchanges) – to disseminate in groups
- Field days for AI agents to conduct training with farmers on oestrus detection, and establish protocols for communication with AI agents
- May be need in some groups for increased household access to small amounts of credit to pay for AI services
- Fee structures that reward successful conceptions (not just attempts) would increase incentives for AI agents
Intervention 1: AI in East Java

Location
• 10% AI coverage in NTB, constrained by distance and transport from Singosari, undeveloped network
• AI coverage 90% in East Java
• In intensive cattle production areas in EJ

Outreach
• 900,000 conceptions from AI in EJ. At an average of 2 cows per household, would service about 450,000 households.
• However, requires close AI agent–farmer linkages most feasible if conducted with organized cattle groups (much fewer)
Background

- Feed the major input & determinant of productivity in the cattle production systems

- Growing specialised cattle fattening sector
  - 10-12 small feedlots in East Java
  - Smaller specialised cattle fattening households (independent, clusters, contract)
  - And cattle traders and butchers – in holding yards

- Growth of vibrant feed trading sector
  - Small, medium, wholesale feed traders – operate in networks
Intervention 2: Feed Traders & Cattle Fatteners in EJ

**Practice change** (Priyanti et al., 2013)

- Constraints to development of feed market on demand and supply sides, esp around seasonality
- Feed traders can access plenty of feed in wet season (December-April) – but so can producers (on-farm or locally)
- Feed gap in dry season (May-November). Traders can supply by sourcing in various agro-climatic areas (incurring higher costs) and by paying higher prices, but can run down / exhaust stocks, or are priced out of the market
- Cattle producers lack finance and technology to store feed on-farm
- Measures to even out feed supply and demand would improve productivity
Delivery model

- Partner with large feed traders in EJ
- Links with (intermediaries are?) medium and small feed traders
- Targets are both feed traders and cattle fatteners
Activities

- Training and infrastructure on feed storage:
  - round bales, straw pits & treatment, drying, storage/baling & bagging.

- Facilitate closer links between feed traders and specialist feed suppliers
  - Specialist forage growers, contract corn seed producers, soybean processors, plantations
  - May be particular technical, logistic or regulatory constraints to address?

- Trials, demonstrations, training and training material on animal nutrition for fatteners
  - Feed, feed technologies, least-cost ration tools etc.
  - Feed traders could participate

- Provide feed traders with training materials and tools to disseminate

- Finance options for both feed traders and buyers could to be explored
Location

• Feed market most developed in lowland areas of EJ (e.g. Probolinggo)
• However specialised fattening occurs in large tracts of EJ (Probolinggo, Tuban and Malang.)
• Potential to apply to intensive cattle and feed production areas of Lombok

Outreach

• A large trader that sells 1 tonne of feed per day, might buy from five medium-sized feed traders, which in turn might source from 20 small traders or collectors
• Would provide enough feed for a year for a small feedlot or specialised fattening group (e.g. 40 head on a 180 day fattening regime)
Interventions in the Outputs Sector

- Under current procurement systems
  - Cattle buyers – traders, butchers, feedlots, cattle marketing companies
  - Have weak links with producers, so
  - Don’t know background / performance of cattle
  - Incur high search, aggregation and holding costs to put together consignments of cattle to specification

Some buyers may have incentives to develop closer links with some producers / groups
Generic Steps for Developing Links Between Cattle Buyers and Producers/Groups

• Consult with cattle buyers to identify requirements on lot size, breed, weight, height and other specifications, timing and pricing
• Consult with cattle groups to establish interest, feasibility and incentives to meet these requirements
• Provide mechanisms through which buyers interact with producers
  – Feedback, training, extension material, veterinary products, finance / backing
  – Participation of buyers in group training activities
• Incorporate agreed demands into more targeted and market-driven production and marketing systems in cattle groups
• Establish, where beneficial, formal structures – off-take agreements, standard operating procedures etc.
• Establish mechanisms for dissemination of successful arrangements to other areas and groups.
Intervention 3: Contract Fattening in East Java

Background

Short-term cattle fattening is an attractive enterprise

- Not land-intensive, commercialised activity
- Fast turnover of cattle and cash
- For subsequent ‘packages’ of feed, cattle and capital

But can be demanding for individual producers

- Selecting, buying and selling cattle, feed, vet care, facilities etc.
- Low growth or adverse prices can easily mean –ve returns
- Significant capital costs and risks
- Access to finance critical

Contract fattening and technical/management assistance can reduce constraints
Intervention 3: Contract Fattening in East Java

Wahyu Utama in Tuban

- Small feedlot (1,400 head capacity)
  - integrated breeding, feed mill, slaughter, meat retail & restaurant
- Contractual relationships with about 100 fattening households,
  - WU sells 4 cross-bred or Ongole bulls to contracted producers (350 kg, 2.5 y.o)
  - Farmers buy cattle through KKPE loan scheme (subsidised at 4%)
  - Cattle fed 12kg/head/day WU ration, 120 days, 1 kg ADG
  - Wahyu Utama then buys back the cattle at 470 kg LW
  - Turnover 3 lots per year
Intervention 3: Contract Fattening in East Java

Returns to cattle fattening households contracted to Wahyu Utama (per head)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Revenue</td>
<td>13,132,800</td>
</tr>
<tr>
<td>Sales revenue</td>
<td>12,960,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>6,319,178</td>
</tr>
<tr>
<td>purchased feedstuffs (including transport)</td>
<td>5,760,000</td>
</tr>
<tr>
<td>other variable costs</td>
<td>59,178</td>
</tr>
<tr>
<td>depreciation</td>
<td>500,000</td>
</tr>
<tr>
<td>Gross profit</td>
<td>6,813,622</td>
</tr>
<tr>
<td>less opportunity cost of inventory/capital</td>
<td>2,171,200</td>
</tr>
<tr>
<td>Net profit (returns to labour &amp; management)</td>
<td>4,642,422</td>
</tr>
<tr>
<td>less opportunity value of family labour</td>
<td>842,696</td>
</tr>
<tr>
<td>Net profit (returns to management)</td>
<td>3,799,726</td>
</tr>
</tbody>
</table>

But negative net profits
- Collateralised loans at market rates (13%)
- ADG 0.7 kg/day
Intervention 3: Contract Fattening in East Java

Practice change
- Contracted households not visited
- But manager said that he requires technical assistance and extension
  - Rations, animal health, penning
- Project could examine and discuss constraints and possible areas of assistance
- And potential for expansion of WU operation
- Would need to assess finance options

Delivery model
- Partner with Wahyu Utama
- Work through WU staff and consultants (intermediaries)
- Target contracted households
Intervention 3: Contract Fattening in East Java

Location
- Wahyu Utama in Tuban
- Growth of specialised fattening sector in East Java, but little on contract
- WU Utama model may be applicable elsewhere

Outreach
- WU – 100 farmers
- May be extendable elsewhere
Background

- No genuine feedlots in NTB and NTT
- 3 in East Java
  - Santosa (Probolinggo) 12,000 head capacity
  - Sapindo (in Malang) 2,500 head
  - Wahyu Utama (Tuban) 1,400 head
- If feed for 120 days, total turnoff 47,700 head per year
  - 1% cattle numbers in East Java
  - 6% of the provincial turnoff
- Sourced from
  - “Mixed” cow-calf households that keep feeders to 250kgs
  - And reportedly increasing numbers of specialised feeder production / backgrounding households (buy calves – sell feeders for latter-stage fattening)
  - Sector offers potential rural and industry development
Intervention 4: Feeder Cattle for Feedlots in East Java

**Practice change**

Incentives for feedlots

- Sapindo and Santosa source feeders through (large) traders that buy from markets / networks (efficient)
- But don’t know the background / performance of feeders (critical factors)
  - Nutrition in suckling and backgrounding stages effects skeletal & physiological growth potential
  - Conformation, feet and disease
  - Major impact on feedlot returns – e.g. ADG 0.8kg compared to 0.9kg
- Links with cattle groups that produce a concentration of feeder cattle to specification can reduce costs / increase confidence in performance on feed
Incentives for specialised feeding households

- Purchase weaners at 89 kg and fed to 250 kg
- At ADWG of 0.4 kg
  - Cattle will reach the target weight in 400 days
  - Generates gross returns of IDR 1.8 million per head, but negative net returns
- ADWG of 0.5
  - Gross returns are IDR 2.4 million, net returns are positive.
  - If price premium of 10%, gross returns increase to IDR 3 million.
Intervention 4: Feeder Cattle for Feedlots in East Java

Delivery model

• Partners – large feedlots in EJ (Sapindo, Santosa, WU)
• Intermediaries – network of feedlot buyers / traders
• Targets - link with groups and producers
Intervention 4: Feeder Cattle for Feedlots in East Java

AIPD-Rural could facilitate feedlot-trader-producer linkages through:

- Training and field days for feedlots with groups
  - To communicate preferences and specifications
  - Extend expertise in nutrition, animal health and management systems
  - AIPD-Rural could also provide technical support in the areas

- Feedlots have bulk feed purchase and milling capacity – rations and mixes could be extended back to producers

- Formal or informal sales agreements could be discussed (lot size, specification-price schedule, finance?)
Intervention 4: Feeder Cattle for Feedlots in East Java

Location
• Sapindo – Malang
• Santosa – Probolinggo
• Wahyu Utama – Tuban
• But feedlots have procurement channels well beyond these districts

Outreach
• The feedlots could potentially reach 20 groups or 2,000 households
• Of these, perhaps ¼ may have the resources and interest to participate
Intervention 5: Slaughter Cattle for Butchers in Eastern Indonesia

Background

- Butchers play key role in beef chains
- Small-scale, integrated networks
  - Buy cattle from markets and production areas
  - Slaughter in service-kill facilities
  - Retail beef and offal in wet market stalls
Intervention 5: Slaughter Cattle for Butchers in Eastern Indonesia

Practice change

- Butchers have weak linkages with cattle producers
- Producers have incomplete information on the preferences of downstream buyers, or how to measure them
- Butchers require
  - Good body/muscle conformation – for dressing percentages and carcass weight for primary cuts
  - Cattle not going to be rejected or discounted for disease reasons (e.g. liver fluke)
  - Consistent numbers (e.g. 14 per week, more in Idul Fitri)
- Partner – with selected butchers (possibly butcher associations?)
- Targets – butchers and producers
Practice change…
Butchers have incentives to participate

- Reduces search, negotiation, transport, road fee and holding costs
- Cattle buying is done by the head butcher (boss)
  - 2 days of his time per week or IDR 313,000 per head slaughtered
  - Higher than slaughter costs combined
Intervention 5: Slaughter Cattle for Butchers in Eastern Indonesia

**Activities**

- Field days where butchers could communicate their preferences for cattle and the reasons
- Visits by some farmers or group leaders to slaughter facilities
- Assistance could be given to producers to assess the feasibility, costs and benefits of servicing this sales channel

**Location**

- Butchers throughout EI, but interventions / pilots best done in cities like Surabaya, Malang and Mataram and Kupang

**Outreach**

- E.g. 15 butchers would employ 105 slaughter workers
- Buy from up to 5,460 cattle producers
- Potential for dissemination of models through large butcher networks
Intervention 6: Breeder Cattle for Inter-Regional Traders in Lombok

Background

• Currently high demand for Bali breeding cattle (heifers and young bulls)
• The disease (brucellosis) status of Lombok means significant trade flows
• 13,600 head in 2012, 15,000 head in 2013
• Conducted through orders (300-1,200 head)
• And provincial standards (sex, age, weight, girth, height, length) and prices
• Oligopoly – only 3 traders – that often work together
Intervention 6: Breeder Cattle for Inter-Regional Traders in Lombok

Practice change

- Traders aggregate lots of 300-1,200 head for a given order
- Spend many months and large outlays to source cattle to specifications to meet orders
- High costs effectively deducted from prices paid to producers
- Not possible for groups to enter into formal supply agreements or contracts with groups or producers
  - Traders receive orders at variable times of the year for variable numbers of cattle to various specifications
- However, may be beneficial for groups to orient / specialise production systems to production of breeder cattle
  - And to link with traders
  - May include access to finance
Intervention 6: Breeder Cattle for Inter-Regional Traders in Lombok

Returns to specialised breeder production

- Cow-calf households turn off Class 2 breeders (12 m.o, 144 kg, 104 cm, 96 cm body length)
- ADG – 0.3kg
- Prices
  - Females - IDR5.5 mil. trader ---- IDR3.5 mil producer
  - Males - IDR 6 mil. trader ---- IDR4 mil. producer
- Gross profit / head - IDR 3.8 million
- Considerably higher with higher productivity & prices
Intervention 6: Breeder Cattle for Inter-Regional Traders in Lombok

Delivery model

- Partner with one or more of the 3 inter-regional breeder traders
  - H Saad Husni, H. Sabri or H. Fathullah
- These traders would develop relationships with cattle groups through:
  - Communicating directly with, and training / mentoring groups on specialised breeder production
  - May include animal health program and finance/backing
  - Price-grade agreement at household level could be explored
Location
In intensive cow-calf production areas, close to the traders – i.e. Central Lombok

Outreach
• H Saad Husni exports 2,800 breeders for export – 1,400 households
• Other traders have similar numbers
Background

- NTT ‘exported’ 66,000 slaughter cattle in 2010
  - mostly from West Timor
- Cattle marketing agencies (not individual) traders accounted significant % of this
  - PUSKUD - 3-4,000 head and TLM – 500 head. Operate on a profit-sharing basis
  - Gejati – 3,000 head. A cooperative, and sell non-members cattle on commission
Practice change

- In all agencies
  - Productivity was said to be is low, fattening periods are ‘too long’
- In Amarasi sites, household and holding areas had poor feed, production, penning and sanitation.
- Agencies are interested in improving productivity, feed (tree forages and feed banks) and the flow of cattle into and from the contracted groups
Intervention 7: Slaughter Cattle for Cattle Marketing Agencies in West Timor

Income effects
- No formal budgeting done
- Benefits depend on the valuation of household inputs (labour, feed) and company inputs (veterinary products, technical services and marketing).
- Ownership structures increases accessibility for the poor, but may also reduce net margins and incentives to maximise productivity and profitability for households

Delivery model
- Partner with agencies (PUSKUD, TLM, Gejati)
- Intermediaries – vets and extension staff of the agencies
- Targets – contracted cattle producers
Intervention 7: Slaughter Cattle for Cattle Marketing Agencies in West Timor

Activities

- Assist the agencies to establish more productive fattening systems tailored to their contracted households, groups and areas
- Based around training, research and piloting
- Facilitating participation of the agencies in training programs with groups, development of training material
- Identify successful households and groups in contractual relationships with the marketing organisations – to act as demonstration households
- The purchase of feeder cattle is a key part of PUSKUD and TLM operations. May be opportunity to link the marketing agencies with specialised feeder cattle producers / groups
- Pilot and explore scale-out
Intervention 7: Slaughter Cattle for Cattle Marketing Agencies in West Timor

Location
- PUSKUD
  - Office in Kupang
  - Operate every district in West Timor, 1 in Flores
- TLM
  - Office in Kupang
  - Operate in large tracts of West Timor
- Gejati
  - Amarasi sub-district, Kupang City

Outreach
- Should be modest in initial stages
- Potentially large reach – up to 3,000 households
Links with Other Projects

• Feasibility of these AIPD-Rural interventions is not dependent on other projects
• But the likelihood of quick and large impacts will be increased through co-ordination with beef-specific projects operating in EI:
  – Indonesian beef cattle projects in Indonesia especially in NTB and NTT
  – IndoBeef
  – Other activities mooted under the ‘Red Meat Forum’
• These programs link directly with large numbers of cattle producers with improved practices, organised into groups
• Links with these groups are attractive to agribusiness actors – part of ‘the deal’ for agribusiness actors
• In turn, AIPD-Rural / agribusiness partners provide a source of extension / outreach for the cattle group project
• Obvious benefits if AIPD-Rural partner with firms and agencies that supply inputs into, or buy cattle from, these groups.
Areas for Further Research

- Banks and finance
- Feed value chains
- Indonesian cattle distribution programs & groups
- ‘Modern / mechanized’ abattoirs
- The slaughter cattle trade in Sumbawa, West Timor and Sumbawa
- Cattle owners in West Timor and Sumba
- Ranches
- Purpose-built cattle ships
General Principles

Seven interventions have been identified that:

- Have potential to introduce technical change, to commercialise small-holder operations, improve their market access or stimulate market development
- Are located in established region- and sector-specific value chains
- Provide sustainable delivery models through the aligning interests of partners, intermediaries and targets
- Lead to significant productivity and income gains for project targets. Targets are primarily small-holder cattle producers, although in some cases are also upstream and downstream actors (e.g. feed traders and butchers)
- Are with companies or agency partners that have significant supply or procurement catchments that link with significant numbers of small-holders
General Role of PRISMA

In facilitating closer linkages between producers/groups and agribusiness firms…

• Technical and management development of firms through specialist technical and management advice.

• Field days where agribusiness firms visit and communicate with groups and households to directly communicate supplier preferences and to understand the production systems and goals of the producers and groups.

• Group training and demonstration activities and/or dedicated field days to connect the actors.

• Assistance to agribusiness firms to disseminate successful practices of project producers/groups to other non-project producers/groups in the catchment areas.