

VALUE CHAIN CASE STUDY: POTATO SUPPLY CHAIN MGMT IN THE PHILIPPINES: LINKING SMALL FARMERS TO A PROCESSOR

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OUTLINE OF TALK

- Case study of private sector led supply chain development vs. value chain enhancement
- Description of the problem
- Problem resolution through a PPP w/small farmer base
- Obligations of farmers vs. the processor
- Anatomy of the supply chain
- Public/private collaborative activities
- Major field constraints
- Lessons learned

UNIVERSAL ROBINA CORP. (URC)

- Largest snack food company in Philippines
- Over 2000 employees
- 1998: 8 processing plants (7 more in China, Malaysia, Singapore, Indonesia)
- Largest local buyer of potato, corn, onion, garlic
- ***Potato chips are leading product line***
- Buys approx. 800T raw potato/month (2001)
- ***60% market share for chips, but falling...***

CHALLENGE: IMPORT SUBSTITUTION

How to compete with the imports??

PEPSICO
FOODS INTERNATIONAL
THE WORLD LEADER IN SNACK FOODS

RUFFLES SUCCESS



**WORLDS LEADING
POTATO CHIP
BRAND**

STATUS QUO: TRADITIONAL AREA (BENGUET) – IMPROPER VARIETIES



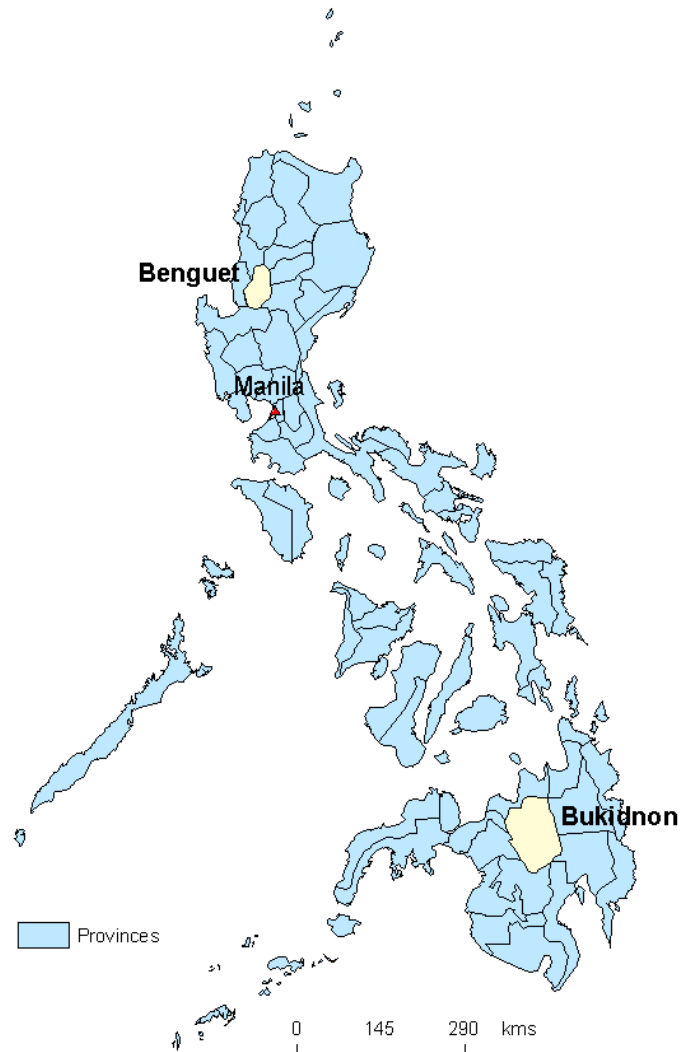
SOLUTION: IMPORT NEW PROCESSING VARIETIES



TRADITIONAL AREA (BENGUET) – BAD TERRAIN, ROADS, RAINY SEASON, VARIETY, PESTICIDES, OPEN MARKET BUYING



Philippines



MT KITANGLAD WATERSHED AREAS **(typhoon-free, 800-1100 MASL)**



ADVANTAGES OF BUKIDNON VS. BENGUET SOURCING)

- Typhoon-free, thus year round sourcing
- Better topography for potatoes
- Fewer foliar pests and diseases (therefore less pesticide use)
- Willing, open-minded farmers (but poor...)
- Small domestic market on Mindanao
- Very pro-active local government

PUBLIC/PRIVATE COLLABORATION

- Discarded “closed” corporate farming approach (Dole, Del Monte, Nestle...)
- Opted for “open” transparent approach with public sector embraced as full partner (Local/Fed. govt., universities, CIP, etc...)

PLAYERS IN THE PPP

PRIVATE

- URC – buyer and processor
- Multinational Seed Companies – US/EU/Aus
- Sea freight companies – international and interisland

PUBLIC

- USAID GEM Project – land/farmer prep
- AUSAID – seed production
- CIP (Int'l Potato Center)
- Fed Govt – MOA/Crop Prod. & PPQ
- Local Govt – extension agents, Mayor's offices
- Local universities – R&D
- Local NGO – to incorporate small, remote farmers

SEED IMPORT CONSTRAINTS: GOP CUSTOMS AND PPQ



COLLABORATION WITH LAUNCH OF FEDERAL HIGH VALUE CROPS PROGRAM (won the right to import certified seed)

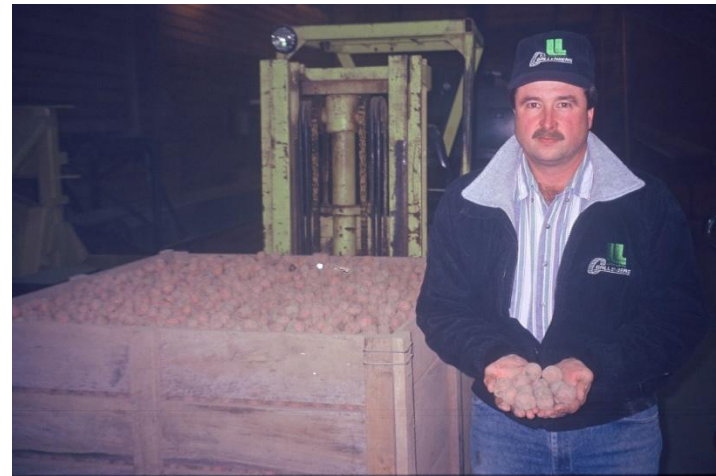


SEED-DRIVEN SUPPLY CHAIN
**(new variety development: research on
the “front end”)**

YEAR ROUND “CERTIFIED” SEED SUPPLY

PLANTING PERIODS

- Australian (July – Oct)
- Local Seed (Nov – Jan)
- US or Europe (Feb – June)



SEED STORAGE IN WISCONSIN



INT'L SEED SHIPMENT TO MANILA (4-6 weeks)



SEED DETENTION AT MANILA (3- 4 days for quarantine inspection)



SEED UNLOADING IN MINDANAO FROM PASSENGER FERRY (2-3 day trip)



SEED DELIVERY TO BUKIDNON PROJECT SITE



T/A: IMPROVED SEED HOLDING AREA PRIOR TO FARMER DISTRIBUTION



T/A: IMPROVED SEED STORAGE PRIOR TO FARMER DISTRIBUTION



FARMER SEED STORAGE



FARMER SEED PREP (SPROUTING) (women...)



Contractual Obligations of Farmer

- Pick up seed at URC holding area
- On farm seed storage and sprouting
- Land preparation
- Agro inputs (except for seed)
- All farm labor
- Must follow recommended production guidelines
- Transport of harvest to buying station
- Compliance with sorting/grading parameters
- Must pay back seed cost thru harvest proceeds

Contractual Obligations of URC

- Provide high quality imported seeds
- Pre-plant contract with guaranteed price
- Must purchase all of crop that is within spec
- Field production and buying guidelines
- Resident agro staff for fulltime t/a
- Establishment of buying station in growing area
- Transport of crop from buying station to Manila

CROP PRODUCTION CYCLE

T/A: LAND PREPARATION (ANIMAL)



T/A: PLANTING (FURROW PREPARATION)



T/A: PLANTING (women....)



T/A: EMERGENCE 45 DAP



T/A: WEEDING AND HILLING UP (60 DAP)



T/A: FLOWERING (75 DAP)



T/A: HARVEST 90-95 DAP (ATLANTIC)



HARVEST CROP - DELIVER TO BUYING STATION FOR SORTING AND GRADING (women sorters...)



SHIPMENT OF CROP TO MANILA FACTORY



**COLLABORATIVE ACTIVITIES BETWEEN
PRIVATE & PUBLIC SECTOR
(tech. assist. = critical success factor)**

T/A: PROCUREMENT OF COMMERCIAL SEED WITH OPTIMAL SIZE



T/A: IMPROVED ON-FARM SEED STORAGE (CIP research...)



INFRASTRUCTURE ASSISTANCE: STORAGE SHEDS FOR AGRO-INPUTS (NON-SEED)



T/A: SEED MULTIPLICATION (ISOLATION)



T/A: SEED MULTIPLICATION (MINITUBER FARM, SCREENED TUNNELS)



FILIPINO 4WD VS. TOYOTA



T/A: VARIETY TRIALS

(close collaboration w/ LGUs and universities)



INSISTED UPON ASSESSMENT VISITS BY SEED SUPPLIERS (DUTCH)



DUTCH SUPPLIER - FILIPINO BUYERS



FARMER FIELD SCHOOLS WITH AUSTRALIAN SEED EXPERTS



COMPANY- SPONSORED TECHNICAL WORKSHOPS (W/ LGU ASSISTANCE)



MARKETING OF PROJECT AT MUNICIPAL AGRICULTURAL FAIRS (LGUs)



MAJOR FIELD CONSTRAINTS

T/A: CONSTRAINT – EXCESS RAINFALL/SHALLOW PLANTING



T/A: CONSTRAINTS – EARLY BLIGHT



T/A: CONSTRAINTS – PESTICIDE SAFETY AND MINIMAL USE



T/A: CONSTRAINTS – CUTWORM DAMAGE



T/A: CONSTRAINTS – LEAF ROLL VIRUS



T/A: CONSTRAINTS – BACTERIAL WILT ***(PRIMARY FACTOR LIMITING PRODUCTION)***



T/A: QC – BACTERIAL WILT



PROJECT ACCOMPLISHMENTS

- Factory was receiving **500T/MO** improved raw material at project peak (2005)
- **300+ farmers** trained in 3 provinces
- **20-25** became excellent, sustainable suppliers (farmer leaders)
- **50+ L-M-P** ag ext. staff trained (TOTs)
- Over **50 int'l varieties** publicly trialed

UPSIDES

URC

- Raw material improvement (“improved vs. traditional potato”)
 - dry matter content
 - fewer internal + external defects
 - color

FARMER

- Diversify out of corn, broker-driven vegetables
- Higher value crop, better price, secure market

LESSONS LEARNED RE: PUBLIC/PRIVATE SECTOR PARTNERSHIPS IN CONTRACT GROWING

- Foster truly *“integrated” rural development* as an economic growth tool
- *Energize “good will”* between unlikely bedfellows: profit-oriented companies, resource-poor farmers, govt. bureaucrats and extension agents

LESSONS LEARNED RE: PPPs & CONTRACT GROWING

- Promote international *agro-technical exchange*
- A contractual arrangement with private sector prevents poor farmers from giving up land and traditions – avoid having to become mere *expendable laborers* on a corporate farm (“dignity preservation!!”)

TOUGHEST “LESSONS LEARNED”

- Must “cull out” the weak farmers...
- Must punish the “side-sellers” aggressively
- Must not underestimate the power of research to solve constraints on production side
- Must do a better job to predict land availability
- Must be prepared to share the spotlight, especially with LGUs and Mayors

OTHER “LESSONS LEARNED”

- Opportunity for “**vulnerable**” group support: Higarot Tribe displacement
- **Women’s roles:** seed prep at farm, seed planting, work at sorting/grading tables
- **Market infrastructure:** URC was “the market”, but no good market for out-of-spec material
- **Small farmer risk mgmt:** crop failure led to significant initial debt to URC; collateral collection was devastating; seed provision (=50% COP) too generous? Leading to lack of discipline?; pre-plant contract price concept hard to sell as risk reduction...

THANKS!!



SPECIAL THANKS!!!



DOWNSIDES

URC

- Could not hit volume levels needed. Needed a higher “critical mass” of reliable farmers
- High degree of loan exposure due to high seed cost (not feasible to attempt cost recovery from all failed farmers...)

FARMER

- Land limitations – expansion required farming too far away from the home-base
- Did not appreciate value of pre-contract price

PROFIT/ROI BASED ON MARKETABLE YIELD

Parameters	4X	5X	8X
Seed Rate (t/ha)	2	2	2
TCOP (\$/ha)	2200	2200	2200
Yield (t/ha)	8	10	16
Harvest Price (\$/ton)	250	250	250
Harvest Value (\$)	2000	2500	4000
Net profit/ha (\$)	-200	300	1800
ROI	-10	14	82

Benefits of Seed Multiplication

Parameters	Seed G0 (10x)	Seed G1 (8x)	Seed G2 (??)
Cost (\$/ton)	650	110	70
Cost/ha (\$)	1300 (650x2)	220	140
TCOP/ha	2200 (1300+900)	1120 (220+900)	1040 (140+900)
% SEED COST (of total cop)	60%	20%	14%
Tons new seed produced (T)	20 (2x10)	16 (2x8)	-
Value of new seed produced (\$/T)	\$110 (2200/20)	\$70 (1120/16)	-