

# **TA-8550 REG: INCLUSIVE BUSINESS SUPPORT - IMPACT ASSESSMENT SPECIALIST FOR AKAY (INDIA & CAMBODIA)**

**FINAL REPORT**  
**ASIAN DEVELOPMENT BANK (ADB)**  
**20TH JUNE 2014**



## CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
A. SUMMARY OF METHODOLOGY .....	5
B. SUMMARY OF FINDINGS.....	8
C. RECOMMENDATIONS.....	11
i. LIST OF TABLES .....	13
ii. LIST OF FIGURES .....	13
<b>EX-POST AND EX-ANTE POVERTY IMPACT ASSESSMENT.....</b>	<b>14</b>
1. CONTEXT .....	15
2. OUTLINE OF APPROACH.....	17
3. RELEVANCE OF PROJECT ON INCOME .....	19
4. REACH OF THE PROJECT .....	26
5. DEPTH OF THE PROJECT IMPACT .....	30
6. SYSTEMIC IMPACT OF AKAY EXPANSION PLANS.....	35
7. RECOMMENDATIONS.....	40
<b>GENDER IMPACT ASSESSMENT.....</b>	<b>43</b>
8: CONTEXT .....	44
9: OBSERVED GENDER IMPACT IN INDIA .....	45
10: POTENTIAL FOR GENDER IMPACT IN CAMBODIA.....	53
11: STRATEGIC INTERVENTIONS IN INDIA AND CAMBODIA .....	55
12: AREAS OF HIGH POTENTIAL GENDER-IMPACT.....	56
<b>GENDER ACTION PLAN .....</b>	<b>58</b>
REFERENCES.....	61
APPENDIX .....	63

## EXECUTIVE SUMMARY

ADB, through its private sector department (PSOD) is considering investing up to USD 20 million in the Indian spices company “Akay” to expand on farm spices production in India from Karnataka to Kerala, and value chain off farm sourcing of organic spices in the Battambang province of Cambodia. The project aims to help the company increase its production capacity from 32,000 tons to more than 50,000 tons a year by 2017.

Akay’s expansion plans consist of 5 business activities spread across India and Cambodia that are expected to have different types of impacts on direct and indirect beneficiaries and stakeholders in the project. These are:

### **Kerala, India**

1. Sterilized whole/ground spice plant
2. Seasonings plant
3. Nutraceuticals plant expansion

### **Battambang, Cambodia**

4. Asothe Model Farm and contract farming
5. Spice extraction plant

### **Project reach:**

The project will contribute to a reduction in rural poverty in India and Cambodia by including farmers in formal agriculture value chains. The project activities aim to increase production of high-value spice products with raw produce to be sourced from an expanded contract-farmer network in India and Cambodia. In India, the project reach is expected to increase from 280 in FY2014 to at least 540 non-farm jobs in FY2018. The number of farmers working under contract farming will increase from 3,000 in FY2014 to 6,000 in FY2018. In addition, at least 5000 non-contract farmers are expected to be impacted by Akay’s open market procurement policy for spices by 2018. In Cambodia, Akay’s farm employees will increase from 30 in FY2014 to at least 80 in FY2018 and the farmers working under contract farming will increase from zero in 2013 to 2,000 in FY2018, and to an estimated 10,000 in the long-term beyond FY2018.

*Table 1. Project reach numbers for Akay’s expansion plans in India and Cambodia<sup>1</sup>*

	<b>FY2014</b>	<b>FY2018</b>	<b>Post-FY2018 (estimated)</b>
<b>India:</b>			
Contract-farmers	3,000	6,000	
Non-farm jobs	280	540	
Non-contract farmers		5000 <sup>2</sup>	
<b>Cambodia:</b>			
Contract-farmers households	0	2,000	10,000
Farm Employees	30	80	

<sup>1</sup> Akay’s contract farmer reach numbers are derived from total expected farmer households contracted by Akay. The average household size of farmers was assumed to be 2 (one man one woman). 1500 farmer households are currently contracted by Akay in India, which is expected to double to 3000 households by 2018. This gives us total contract-farmer reach in India to be 3000 in FY14’ and 6000 in FY18. Similarly in Cambodia, 1000 farming households are expected to be contracted by Akay by FY18’, which gives a total contract farmer reach number of 2,000 farmers.

<sup>2</sup> Result of Akay’s plans for open-market procurement policy for its new spice extraction plants

Seasonal farm workers	200	400	
-----------------------	-----	-----	--

### Expected depth of intervention<sup>3</sup>:

To calculate the depth of impact on project beneficiaries, this study classified the survey population under three international poverty lines of <USD1.25, <USD2, and <USD3. Under constraints of unavailability of precise poverty line data for respondents, international lines were adjusted to the bottom range of the actual range of income used in the survey questionnaire, to arrive at a safe estimate close to international poverty lines (see table 2) for India and Cambodia. In the absence of this classification for the entire population under project reach, respondents from the surveys conducted in India and Cambodia were divided under survey poverty lines. For respondents in India and Cambodia, the survey asked for total monthly household incomes within pre-set ranges. We divided the lower-limit of these ranges by the average number of income earners per household, and by 30 (days), to arrive at average household incomes/person/day for each respondent. The smaller sample of 51 women in India were asked separately to report on their individual monthly incomes, which was similarly divided to income per day.

In India, the poverty situation of farmers under Akay's contract is noticeably different in Karnataka and Andhra Pradesh. Only 3% of farmers in Karnataka, who have been with Akay for an average of 10 years, are still under the approximated extreme poverty line of USD1.55/day, 31% earn less than USD2.33/day, and 56% earn less than USD3.1/day. Approximately 44% of contract-farmers in Karnataka are above the USD3/day poverty line. In Andhra Pradesh, after a short 1 year average engagement with Akay, 69% of farmers are under the approximated extreme poverty line, 87% under USD2.33/day line, and 98% under USD3.1/day line. A majority of contract-farmers in Andhra Pradesh are therefore extremely poor, and almost all of them are in a poverty situation.

In Cambodia, 27% of prospective farmers currently fall under the approximated extreme poverty line of USD1.3/day, 48% under USD 1.96/day, and 76% under USD3.26/day. 76% of survey respondents who are poor by cumulative standards, and 27% who are extremely poor, present Akay the opportunity to uplift them from poverty by enabling them to earn higher farm revenues and stabilize the receipt of higher household incomes. This poverty alleviation is demonstrated through the permanent employees and season farm workers already employed by Akay on its model farm in Asothe in Battambang province in Cambodia, all of who earn daily incomes higher than USD~2/day. Only 4% of permanent employees, or 12 people, earned incomes lower than USD3.26/day.

<sup>3</sup> There are 3 important notes on the methodology employed here:

1. Average poverty lines used from the survey are only rough estimates because of use of lower ranges, instead of the medians, because false positives were considered safer for project purposes than false negatives (by roughly *overestimating* the number of poor people, instead of *underestimating* them)
2. The classification was only conducted for total survey population, which has been reported in the table, and serves as a rough estimate for the overall project. The data for total project beneficiaries is not yet available.
3. Data on women farmer's incomes beyond the N=51 women's survey conducted in India is lacking, but we assume the 51 women are representative of other women farmers in India because of random sampling. In addition, our survey asked for total *household* incomes, which included the incomes of wives of farmers in India and Cambodia engaged in farming. This means that the 43% of prospective farmers, 12% of permanent employees, and 70% of seasonal farm workers in Cambodia who are estimated to be women, have also been averaged in to the overall income classification in the table.

*Table 2. Depth of Akay's project expansion reach in India and Cambodia*

	International Poverty lines (USD)	<1.25	<2	<3
	Approximate Poverty lines from survey income range (USD)	<1.55	<2.33	<3.1
	Total sample	% Under	% Under	% Under
<b>India</b>	180	37%	59%	77%
Karnataka Contract farmers (surveyed)	89	3%	31%	56%
Andhra Contract farmers (surveyed)	91	69%	87%	98%
	Approximate Poverty lines from survey income range (USD)	<1.3	<1.96	<3.26
<b>Cambodia</b>				
Prospective Contract farmers (surveyed)	194	27%	48%	76%
Permanent employees (surveyed)	30	0%	0%	4%
Farm workers (surveyed)	20	0%	0%	0%
	Total responses	<USD1.25	<USD2	<USD3
<b>India Women farmers N=51</b>	36	44%	50%	64%

## A. SUMMARY OF METHODOLOGY

This ex-ante Poverty Impact Assessment focuses on Akay's expansion plans in India and Cambodia, with specific attention to the impact of the proposed outgrower model it plans to adopt in Cambodia. This review has been conducted as a short evaluation, and assesses the following criteria:

1. The relevance of this project on people's income
2. Reach: number of people directly benefitting from the project, and their socioeconomic status before (year 0), in between (years 1 and 3) and after (year 6) the project
3. Depth: income increase, what are people doing with the additional money; how does it affect their poverty situation
4. Systemic impact of the project
5. Impact of project on women farmers and workers
6. Gender Action Plan to increase strategically increase gender impact

Our ex-ante assessment of Akay's planned contract-farming model in Battambang province, Cambodia, was supported by an ex-post assessment of Akay's existing contract-farming arrangements in the states of Karnataka and Andhra Pradesh in India. Akay's ongoing contracts in the two states present a good opportunity to review the existing impact of contract-farming, results from which are used to predict the impact of contract-farming in Samlot district, Battambang, Cambodia. In addition, Akay has been engaged with farmers in **Karnataka for an average of 10 years**, and with farmers in **Andhra Pradesh for an average of 1 year**, which presents a natural longitudinal study to see the time-effects of contract-farming with Akay. We also used a control group of farmers in both states – those who haven't been contracted by Akay – as a counterfactual to contract-farming to extricate causal links between farmer socioeconomic conditions and engagement with Akay.

Answers for the investigation have been generated through a combination of desk research, field interviews and surveys. The field surveys in India and Cambodia form the core of our approach, driving insights on the future impact of this project:

- Field survey
  - Respondents were surveyed on a range of key financial and socio-economic indicators to assess the various routes to impact for prospective contract farmers
    - India survey  
the sample consists of 180 households of contract farmers (corresponding to a 95% confidence level and 7% error margin) with a control group of another 178 households to get insights on 1,500 contract farmers<sup>4</sup>. The location consists of 2 districts in Karnataka and 2 districts in Andhra Pradesh. Alongside, a sample of 50 women (wives of the contract farmers) were interviewed separately through an add-on questionnaire to provide an additional perspective to the gender impact of the project.
    - Cambodia survey  
the survey in Cambodia include permanent employees, seasonal workers, and prospective contract farmers. The sample consists of 30 permanent employees (100%), seasonal workers (20, 10% of the 200 workers) and 200 households of prospective contract farmers (corresponding to a 95% confidence level and 7% error margin) for a mid-term size of 5,000 households.
- A review of company documentation to understand and evaluate Akay's planned route to impact within its sphere of influence

---

<sup>4</sup> While the original sample size was 175 households of contract farmers and 175 households as control group, 5 contract farmers and 4 control group farmers from the pilot survey were also included for analysis

- Review of secondary literature on organic farming, crop diversification and financial inclusion in rural areas in low-income countries.

For the purpose of the Gender Impact Assessment, we surveyed a sample of 51 women (26 in Andhra Pradesh, 25 in Karnataka)<sup>5</sup>, in addition to the survey of 180 male chilly farmers, to gauge the condition of women on important socioeconomic indicators. These women were surveyed independently from men and their households to provide them with an environment where they could respond without being influenced by dominant members of their household. At the same time, our survey of male chilly farmers had a number of questions to assess gender impact from their point of view too. Overall, 86% (155) of 180 men surveyed had wives working on an Akay contract farm. The two sets of responses should provide a good indicator of the overall conditions of women under contract and/or employ of Akay in India.

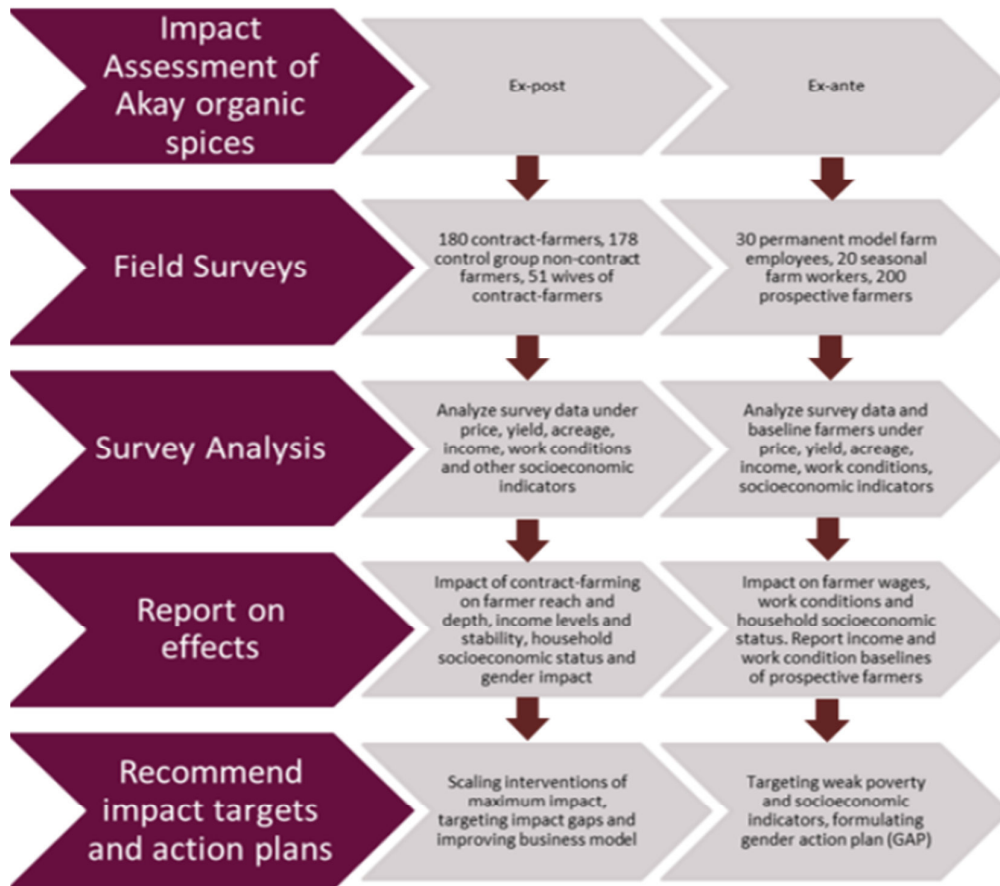
*Table 3. Sample sizes and confidence levels of surveys*

	Women	Men	Control	Total Planned	Actual Total	Confidence Level	Error Margin
India Farmers Survey	51	180	178	410	409	95%	7%
Cambodia Prospective farmer survey	83	111	0	200	194	95%	7%
Cambodia Farm workers	3	17	0	20	20	95%	7%
Cambodia Farm permanent employees	19	11	0	30	30	95%	7%

<sup>5</sup> The relatively small sample size of 51 women makes it difficult to extrapolate their outcomes to the women population under Akay as a whole. However, their responses are still indicative of the general conditions witnessed by women in Karnataka and Andhra Pradesh under Akay contracts, and can be used to draw reasonable conclusions about gender impacts in the two states.

Our mixed-method approach that combined ex-post and ex-ante analysis of Akay's contract-farming activities to understand impact is illustrated in the figure below:

Figure 1. Summary of assessment methodology





## B. SUMMARY OF FINDINGS

### 1. Poverty impact in India and Cambodia:

#### *a. Revenue of farmers in India*

Akay contract farmers in both Karnataka and Andhra Pradesh reported earning a higher revenue/acre of chilly grown than their non-contract farming counterparts. **Overall, Akay contract farmers earned 10% higher revenues than the control group.** This effect is smaller in Karnataka due to strong control group baselines<sup>6</sup>. In Andhra Pradesh, for example, two important factors contributed to higher revenues/acre for farmers. Akay farmers received a selling price of Rs. 6,577.22 per quintal of chilly grown, 14.3% higher than the selling price received by non-Akay farmers (Rs. 5,754.0). Akay farmers also saw a small increase of 2.38% in yields/acre of chilly grown compared to non-Akay farmers. This resulted in both higher yields of chilly per acre of chilly planted, and higher prices per quintal of chilly output leading to a 17% increase in average revenue/acre of chilly grown over control group farmers. In Karnataka there was a smaller gain of 1.16% in yields/acre of chilly grown and 2.86% in selling prices for Akay farmers, over the control-group, resulting in an overall 4% increase in revenue/acre of chilly grown by Akay farmers.

The differences between Andhra Pradesh and Karnataka are in both average yields of chilly, and in selling prices received from Akay. Karnataka farmers, for example, reported receiving a selling price of Rs. 7,532.6 per quintal of chilly, whereas farmers in Andhra Pradesh received Rs. 6,577.22, 12.6% less than Karnataka farmers. This disparity informed the recommendation for Akay to review its contract-terms in the two states in order to bring parity in prices and revenues earned by contract-farmers here. It is also worth noting here that farmers in both states saw expansion in average size of landholding, and thus increases in total yield, but their yields/acre remained close to the control-group farmers, leading to the conclusion that the organic farming methods, though beneficial for the environment, and health of farmers, has not lead to a significant increase in average yields in India.

#### *b. Household incomes in India*

Akay contract-farmers reported earning significant increases in average monthly household incomes since joining Akay's contract-farming model. Overall, Akay's contract-farmer's households have earned **50% higher monthly incomes** since joining Akay. Akay farmers in Karnataka saw their household **income rise by 75%** since joining Akay (10 years) (INR6,600 before Akay to 11,600 since Akay). Akay farmers in Andhra Pradesh saw household incomes increase by 16% from INR 4700 to INR 5400. Compared to the control group, Akay farmers earned 15% more household income in Andhra Pradesh, but 14% **less** than the control group in Karnataka. This data demonstrates that Akay farmers have benefited from significant household income increases since joining Akay. It also suggests that income increases have impacted farmers in **general** in Karnataka, who now bring in greater household incomes than Akay farmers. High household incomes of non-Akay farmers in Karnataka could be due to diversification of household incomes (through non-farm employment opportunities) and higher farm incomes due to widespread improvements in prices and market access in the area (an effect that could be a positive externality of Akay farms).

#### *c. Wages of farm employees in Cambodia*

Current farm employees and seasonal farm workers on Akay's model farm in Asothe, Samlot District, Battambang Province, **reported an average 108% and 71% respective increases in their monthly wages since working with Akay** on its model farm. Farm employees and seasonal farm workers saw

---

<sup>6</sup> A large part of revenue increases would be due to increases in yield/acre of primary crop grown and in procurement prices. Though farmers in Karnataka increased total acreage under cultivation, they did not see a significant gain in average yields/acre grown compared to control group farmers. This should be noted in light of introduction of organic farming systems v/s traditional farming methods found amongst the control group.

their wages increase from KHR~410,000 to KHR ~854,000, or USD<sup>7</sup>211 (employees) KHR~348,000 to KHR~596,000, or USD147.47 (seasonal workers). Akay currently pays its farm employees a wage of USD 5/day, or roughly USD 130 per working month (26 days). In comparison, the average minimum wage in Cambodia (2011), is USD61/month<sup>8</sup>. Even workers in the country's largest formal industry by employment, garments, earned an average of USD65/month<sup>9</sup>, significantly lower than Akay's employees in rural Cambodia. Akay farm employees and seasonal farm workers receive wages 245%, and 141% higher than the national minimum wage, respectively.

This demonstrates strong **positive income impacts** under Akay's employment, and demonstrates the significant premium over minimum wage, and other formal economy benchmarks of low-semi skilled labor, paid by Akay to its employees in Cambodia. High-wages paid in rural areas can stimulate the local economy by increasing per capita expenditures on essential goods and services, and also incentivize entrepreneurial activities if workers decide to invest incremental income in start-up businesses and small enterprises.

**d. Expected income of contract farmers in Cambodia**

According to projections of Akay's own model, annual incomes for contract farmers are expected to rise from USD 3,368 in 2015 to USD 11,318 in 2021, a **CAGR of 27%**. These incomes are projected to go up from the sale of crops grown on the contract-farms. In the first two years of operation farmers will earn revenue (USD 5,600/annum) from the sale of turmeric and coleus crop, whose seeds Akay will provide free of cost for the duration of the project. From FY17 onwards, farmers will also be given the first batch of black pepper seeds free of cost, from which they will earn an additional \$4,200/annum, bringing total revenue up to \$9,800/annum. Finally, in FY20, Akay will provide farmers seeds and technical training to plant rubber trees, which will bring them \$3,750/annum FY20 onwards. The farmer will have to incur the cost of labor, manure, composting, drip irrigation (pro-rate basis) and diesel for irrigation, amounting to \$2,232.50/annum (\$3,799.17 for FY17-19 for drip irrigation). Eventually, farmers are expected to see their incomes rise from \$3,367.50/annum in FY15', to \$11,317 in FY20. This expected income boost will come, broadly, because of crop diversification, fixed procurement at premium prices, and technological interventions, the cost of which will be shared by the farmer and Akay.

**2. Gender Impacts:**

**a. Stability of income in India**

Wives of Akay's contract farmers surveyed in India (86% of who worked on contract-farms) had different levels of income stability and changes in work conditions since working under Akay. **76% of women in Karnataka, and 31% in Andhra Pradesh, said they had stable incomes. 84% of women in Karnataka, versus 8% in Andhra Pradesh, reported improvements in work conditions** under Akay's contract. These results corroborate the results of contract-farming male farmers in the two states on the income stability indicator, and the disparity between the two state groups of women could be explained by the difference in average length of association with Akay, and by differences in implementation of the contract-farming model.

**b. Control over earnings in India**

**87% of male contract-farmers in Karnataka on behalf of their wives, and 80% of their wives, agreed that their control over their earnings had increased** since contract-farming for Akay. In

---

<sup>7</sup> USD1 = 4041.47 KHR

<sup>8</sup> [Perinelli, B., Alarm, VA \(2011\), Minimum Wage Compliance Report in Cambodia, Wage Indicator Report August 2011](#). Amsterdam, The Netherlands: Wage Indicator Foundation.

<sup>9</sup> Daily wage rate of USD2.71 X 24 (6 working days/week) = USD65.

Andhra Pradesh, 8% of men on behalf of their wives, and 4% of women themselves, said their control over their own earnings had increased since contract-farming with Akay.

*c. Work conditions in India*

**84% of women in Karnataka, versus 8% in Andhra Pradesh, reported improvements in work conditions** under Akay's contract. The negligible improvement in work conditions in Andhra Pradesh, as reported by respondents, can be tied with the rest of the subdued effects of Akay's short-term (1 year, on average) engagement with farmers in Andhra Pradesh, and is an important note in the review of Akay's contract-farming model in India.

*d. Women's agency & financial inclusion in Cambodia*

Out of the 194 prospective contract farmers surveyed in Prey Thom Village, Battambang, Cambodia, 83 (42.8%) were women. Of these, **~63% were primary income earners for their households**, which means that any potential gender impact on them would have a direct impact on the condition of their households. For example, for every one woman of the 52 primary earners impacted, another ~5 people (average household size in survey) in her home would feel effects of employment, income and social infrastructure changes. 92% of these women reported having somewhat-very unstable incomes at the current stage. This presents a strong opportunity for Akay's gender impact by capitalizing on gender-parity in the homes of farmers by improving income levels and stability. Thus in addition to the 52 primary income earners surveyed, 247<sup>10</sup> other men, women and children could be positively impacted by Akay's gender-specific activities. Even though **93% of 83 prospective women contract-farmers in Battambang, Cambodia had joint control over household expense** with their spouse, and 6% had direct control over it, none had a bank account in their name.

---

<sup>10</sup> 52 Primary income Earners X 4.75 (average household size in survey)

## C. RECOMMENDATIONS

The ex-post and ex-ante assessment results highlighted sectors of potential social impact in the

- i) Financial inclusion
- ii) Information and training dispersal
- iii) Income stability measures of farmer's socioeconomic status
- iv) Work conditions and contract-model

Our recommendations stem from inadequate impact found in training modules, outreach and communication, farmer household status, and women's participation in project development. These sectors would have to be targeted in a strategic manner, using broader company policies to intervene in more specific causes of poverty and exclusion. We recommend 5 essential instruments to achieve impact in these categories which are illustrated in figure 2. The outcomes of these instruments of intervention are expected to be:

- i) Greater financial inclusion of women in formal banking practices, resulting in development of savings behavior, savings for enterprise, and possible long-term household wealth generation
- ii) Greater information symmetry between Akay and contract-farmers, human capital development and infusion of technical know-how in local farming community, resulting in more informed, capable and empowered farmers.
- iii) Stable incomes for farmers which result in financial safety and improved planning for household needs
- iv) Parity between contract-farming model in Karnataka and Andhra Pradesh, and extension of work condition, income and stability benefits to aggrieved Andhra Pradesh farmers

Akay was receptive to the recommendations laid out in this report. Akay welcomes the recommendations on annual measures for monitoring impact. Akay strongly supports the business model recommendations for social impact maximization, and affirms its commitment to implement communication strategy measures to improve communication with the farmers, make them active stake holders in social impact plans, and have a direct impact on their living standards.

The strategy recommendations to achieve these outcomes are illustrated in figure 2:

Figure 2. Summary of recommendations to increase project impact



## i. LIST OF TABLES

- Table 1. Project reach numbers for Akay's expansion plans in India and Cambodia*  
*Table 2. Depth of Akay's project expansion reach in India and Cambodia*  
*Table 3. Sample sizes and confidence levels of surveys*  
*Table 4. Sample sizes and confidence levels of our surveys*  
*Table 5. Checklist of income beneficiaries under Akay expansion plans*  
*Table 6. Exploring Akay's route to income impact on stakeholders*  
*Table 7. Revenue and income changes between states and sample groups in India*  
*Table 8. Model Farm income impact on employees and workers*  
*Table 9. Cambodia Prospective farmer's baseline and expected income change*  
*Table 10. Reach of Akay's expansion activities*  
*Table 11. Income and costs of an individual Akay contract farmer in Cambodia*  
*Table 12. Depth of Akay's project expansion reach in India and Cambodia*  
*Table 13. Women's performance on key financial empowerment indicators*  
*Table 14. Akay's impact on key work and income indicators for women*  
*Table 15. Women's average monthly income compared to national average and international poverty lines*  
*Table 16. Cambodia baseline results for income and finance indicators*

## ii. LIST OF FIGURES

- Figure 1. Summary of assessment methodology*  
*Figure 2. Summary of recommendations to increase project impact*  
*Figure 3. Impact on average annual revenue per acre of chilly grown by Akay contract farming*  
*Figure 4. Impact on average monthly household income of contract farmers after joining Akay*  
*Figure 5. Impact on average monthly household income of Akay contract and independent farmers*  
*Figure 6. Impact of working with Akay on monthly wages*  
*Figure 7. Stability of income of prospective contract farmers in Cambodia*  
*Figure 8. Stability of income of Akay contract farmers in India*  
*Figure 9. Impact of working with Akay on income, as reported by farmers*  
*Figure 10. Average monthly household income before and after contract with Akay*  
*Figure 11. Uses of incremental income by contract chilly farmers in India*  
*Figure 12. Stability of income of prospective contract farmers in Cambodia*  
*Figure 13. Projected annual net income of a contract farmer*  
*Figure 14. Uses of incremental income by prospective contract farmers in Cambodia*  
*Figure 15. Stability of women's income*  
*Figure 16. Bank account in women respondent's name*  
*Figure 17. Bank Account in wife's name*  
*Figure 18. Who controls wife's bank account?*  
*Figure 19. Women respondents who have control over own earnings*  
*Figure 20. Who has control over wife's earnings*  
*Figure 21. Improvements in work conditions under contract-farming for Akay*  
*Figure 22. Increase in control over earnings since contract farming with Akay*  
*Figure 23. Has working with Akay improved wife's control over earnings*  
*Figure 24. Distribution of labor among different farm activities*  
*Figure 25. Comparison of women's and men's uses of incremental income*  
*Figure 26. Control over household expenses*  
*Figure 27. Women's income stability*  
*Figure 28. Potential impact of extending banking services to women*



## EX-POST AND EX-ANTE POVERTY IMPACT ASSESSMENT

## 1. CONTEXT

ADB, through its private sector department (PSOD) is considering investing up to USD 20 million in the Indian spices company “Akay” to expand on farm spices production in India from Karnataka to Kerala, and value chain off farm sourcing of organic spices in the Battambang province of Cambodia. The project aims to help the company increase its production capacity from 32,000 tons to more than 50,000 tons a year by 2017.

Akay’s expansion plans consist of 5 business activities that are expected to have varying degrees of impact upon stakeholders:

1. **Sterilized whole/ground spice plant:** Akay is constructing a manufacturing facility in Kerala for steam sterilized whole and ground spices with capacity of 10,000 ton per year, in response to high demand for clean spices free from any contamination.
2. **Seasonings plant:** Akay will develop a manufacturing facility in Kerala with capacity of 2,500 ton per year and marketing/distribution network for seasonings products. As such, this new plant will help Akay increase the proportion of its domestic sales from about 5% today to more than 11% by 2018.
3. **Nutraceuticals plant expansion:** Akay plans to invest in expansion of laboratories in Kerala, which will result in capacity of 3,000 ton per year, and commercializing major patentable products by 2017 to scale up this segment.
4. **Farm equipment and contract farming:** In Cambodia, Akay has purchased and rehabilitated 720 hectares in the Battambang province to build a model organic farm. To date, 200 local villagers have been employed, and farmer training, extension work, and field demonstration have been concluded. Commencement of the contract farming activity is expected shortly. The model farm is the only Indocert organic farm in Cambodia. Akay aims to reach to 10,000 farmers through contract farming by 2018. Capital expenditures will be needed for drip irrigation systems, extension of black pepper cultivation, and expansion of drying yard.
5. **Spice extraction plant:** In addition, Akay will build an extraction plant in a special economic zone in Cambodia (most likely in Phnom Pen or Sihanoukville) with capacity of 3,000 ton per year which will source raw materials from the model farm and the contract farmers<sup>11</sup>.

The major driver of this project’s impact on poverty will come from prospective contract farming arrangements. Contract farming, also known as outgrower schemes, replace *ad hoc* trade agreements with coordinated commercial relations between producers, processors and traders leading to a vertical integration of the agricultural value chain. While there are a number of initial constraints to establishing such schemes (such as establishing trust), they can provide firms with the opportunity to control supply while helping farmers improve production standards.<sup>12</sup>

The outgrower model that Akay currently follows in Karnataka, India is executed by Akay’s subcontractor, RM Betgiri and Company (RMBC). Akay has an annual contract (covering 1 harvest) with RMBC for a specified amount of chilly. RMBC, in turn, have annual (covering 1 harvest) written contracts with farmers. The procurement price in the contract is determined by Akay based on market conditions. The number of farmers on contract increases with Akay’s requirements for produce. An advance is provided (between 20% and 25%) to the farmers for seeds and inputs, with

---

<sup>11</sup> Akay commercial and technical RFP

<sup>12</sup> “Outgrower Schemes – Why Big Multinationals Link up with African Smallholders”, Felgenhauer and Wolter



the remaining amount payable to farmers post-harvest. RMBC also provides transport for the produce of farmers, saving them additional costs which regular farmers usually incur.<sup>13</sup>

In this context, most of the prospective farmers are smallholder, subsistence farmers. In Cambodia, the farmers surrounding Akay's model farm in Battambang are ex Khmer Rouge soldiers, who were allotted around 5 acres of land each by the government. These farmers are poor, uneducated and depend on corn or cassava cultivation in a repeated cultivation pattern, which over time exhausts the land and depletes it of key nutrients.<sup>14</sup> Thus, prima facie, the potential for impact on the economic situation and productivity of land of these farmers through contract organic farming is significant.

---

<sup>13</sup> This information was provided by Mr. Srinivas Betgiri of RMBC in an informal interview

<sup>14</sup> "Akay Cambodia Social Development Efforts", Akay, 2013

## 2. OUTLINE OF APPROACH

This ex-ante Poverty Impact Assessment focuses on Akay's expansion plans in India and Cambodia, with specific attention to the impact of the proposed outgrower model it plans to adopt in Cambodia. This review has been conducted as a short evaluation, and assesses the following criteria:

1. The relevance of this project on people's income
2. Reach: number of people directly benefitting from the project, and their socioeconomic status before (year 0), in between (years 1 and 3) and after (year 6) the project
3. Depth: income increase, what are people doing with the additional money; how does it affect their poverty situation
4. Systemic impact of the project

Answers for this have been generated through a combination of desk research, field interviews and surveys. The field surveys in India and Cambodia form the core of our approach, driving insights on the future impact of this project:

- Field survey  
Respondents were surveyed on a range of key financial and socio-economic indicators to assess the various routes to impact for prospective contract farmers
  - India survey  
The sample consists of 180 households of contract farmers (corresponding to a 95% confidence level and 7% error margin) with a control group of another 178 households to get insights on 1,500 contract farmers<sup>15</sup>. The location consists of 2 districts in Karnataka and 2 districts in Andhra Pradesh. Alongside, a sample of 50 women (wives of the contract farmers) were interviewed separately through an add-on questionnaire to provide an additional perspective to the gender impact of the project.
  - Cambodia survey  
The survey in Cambodia include permanent employees, seasonal workers, and prospective contract farmers. The sample consists of 30 permanent employees (100%), seasonal workers (20, 10% of the 200 workers) and 200 households of prospective contract farmers (corresponding to a 95% confidence level and 7% error margin) for a mid-term size of 5,000 households.
- A review of company documentation to understand and evaluate Akay's planned route to impact within its sphere of influence
- Review of secondary literature on organic farming, crop diversification and financial inclusion in rural areas in low-income countries.

Based on this assessment, it articulates a monitoring process going forward. Analysis and findings relating to the impact of the project on gender are to be highlighted in the 'Gender Impact Assessment' section of this report.

---

<sup>15</sup> While the original sample size was 175 households of contract farmers and 175 households as control group, 5 contract farmers and 4 control group farmers from the pilot survey were also included for analysis

*Table 4. Sample sizes and confidence levels of our surveys*

	Women	Men	Control	Total Planned	Actual Total	Confidence Level	Error Margin
India Farmers Survey	51	180	178	410	409	95%	7%
Cambodia Prospective farmer survey	83	111	0	200	194	95%	7%
Cambodia Farm workers	3	17	0	20	20	95%	7%
Cambodia Farm permanent employees	19	11	0	30	30	95%	7%

Note on survey methodology:

We used the Raosoft® sample size generator to produce representative sample sizes for our survey of farmers, employees and prospective farmers in India and Cambodia (see table 1) with a 95% confidence level and 7% error margin. The actual and planned sample size differed by a few individuals in India and Cambodia due to a large range of missing or invalid responses of a few individuals, who were omitted from our analysis.

### 3. RELEVANCE OF PROJECT ON INCOME

Akay's expansion project in Kerala and Cambodia is expected either directly or indirectly impact the income of various stakeholders. This impact will be spread over the short, medium and long-term scope of Akay's engagement with its farming community. The direct impact of Akay's activities will be through direct labor employment and contracting, and procurement through distributors, suppliers, etc., whereas the indirect impacts will come through various infrastructure, skill and capacity development initiatives that will support the employee and supplier base of Akay's operations. Direct income impact will be expressed via:

- i) Wages paid to full-time employees on processing plants and Akay facilities with the outcome of higher incomes due to Akay's premium on minimum wage
- ii) Price paid (with Akay's premium) to contract-farmers for their agreed-upon range of produce, with the outcome of higher farm revenue from sale of produce at Akay's premium price, higher total farm income
- iii) Crop diversification and provision of seeds (turmeric and coleus provided by Akay every year, free of cost, and a 1 time provision of rubber and black pepper seeds), with the outcome of higher farm income from cash crops and diversification, distribution of risk among diversified crop outputs as hedge from market volatility.
- iv) Wages paid to technicians, engineers, construction workers and laborers for setting up of, operation and maintenance of capital intensive production facilities, with the outcome of increased economy activity among local skilled and semi-skilled labor force, higher expenditure in local markets due to increase in overall wages in local economy resulting in higher market activity.

The indirect impacts income would come through:

- i) Infrastructure development in local communities that attract new investment and boost current economic activity, with the outcome of increase in physical access to goods, services and markets.
- ii) Capacity building of local communities through education, training and health care services, with the outcome of increased human capital capabilities, long-term growth in employment prospects, skills, and health.
- iii) Free essential services provided to workers and farmers which increase their disposable income with the outcome of increased disposable income at the end of the month

Table 5 lists the beneficiaries of income-impacting activities of Akay, and their relevance to specific activity plans;

*Table 5. Checklist of income beneficiaries under Akay expansion plans*

Project Plans	Full-time Farm workers	Contract Farmers	Non contract farmers	Engineers, technicians, laborers	Distributors, logistics staff	Women
(a)Kerala whole/ground spice plant	X	X	X	X		
(b)Kerala Seasonings Plant	X		X	X	X	
(c)Kerala Nutraceuticals plant expansion				X		

(d)Cambodia farm equipment and contract farming	X	X		X	X	X
(e)Cambodia spice extraction plant		X	X	X		X

*Table 6. Exploring Akay's route to income impact on stakeholders*

Income Beneficiary	Input	Route to income-impact	Output	Term
<b>Full-time Farm Workers</b>	Employment on Akay farms in India and Cambodia; wages	Direct; Workers are given fixed and fair wages for duties performed on Akay farms Indirect; workers are given housing, and other services	Higher wages than previous jobs and local minimum wage; income stability; Increased disposable income due to free housing, water and food	Short, Medium and Long term
<b>Contract Farmers</b>	Fixed-price, fixed-term contracts, training, supply of technology, extension of sustainable and organic farming practices	Direct: Guaranteed purchase price and quantities, changes in yield with application of new technologies, changes in cost of inputs with application of organic farming methods; Indirect: Education, training and infrastructure development	Increased revenue through higher prices, lower input costs (fertilizers, insecticides), and higher yields; increase in income from farming; Income stability due to fixed contract agreements; increased income through diversification of farm outputs, increased household income through capacity development	Medium and Long term
<b>Women</b>	Employment on Akay Farms, and as part of contract-farming, child-support services for working mothers	Direct; payment of fair wages for permanent farm workers; increased revenue from farm products through fixed contracts, increased yields, higher prices, lower input costs and technological changes; providing child care services to reduce time and monetary burden on woman, which can be diverted to income generating activities and household needs	Wage premium over-and-above minimum wage and subsistence industry standards – increased wages; higher revenue and thus income through sale of farm outputs; increased disposable income because of child-support services; increased wages through better time-investment in productive activities	Short, medium and long term
<b>Engineers, technicians, short-term laborers</b>	Wages and payments made towards	Hiring short-term labor as well as engineers and	Increased employment opportunities for local labor and service	Medium and Long-term

	construction, installation, operation and maintenance of buildings, machinery and processes at Akay farms and plant	long-term technicians to build, set-up and operate machinery at Akay facilities; payment of wages to personnel, contract and ad-hoc payment to local O&M service providers	providers; expansion of income-earning bracket in Akay plans; increase in revenue and income of local service providers, masons and construction workers	
<b>Distributors, logistics staff</b>	Contracts formed with local logistics firms and third-party distributors for farm-to-plant-market delivery; price paid to delivery and logistics agents for aforementioned activities	Establishing economic relations with local logistical and distribution networks, forming short-medium term contracts; payment for service to local sub-contractors	Increased economic activity in local economy, increase in income for sub-contractors and third-party service providers; increase in reinvested profits by Akay and distributors into income-generating activities	Long-term

### Income impacts of contract farming with Akay in India

The observed impact of Akay's intervention in farming activities in Karnataka and Andhra Pradesh can help inform our expectations of income-effects of Akay's expansion plans. The survey results of 358 respondents spread across Karnataka and Andhra describe the actual observed impact of Akay's contract farming system over the short (1 year) and long term (10 years average). The survey sampled both Akay contract farmers and a control group consisting of farmers not associated with Akay. Akay farmers from Andhra Pradesh demonstrate income effects of Akay's model after a **1 year contract engagement** (short-term), whereas the farmers from Karnataka show the income-effects after **10 years of engagement** with Akay's contract farming model. Table 7 shows household income and farming income changes observed in the two samples.

Table 7. Revenue and income changes between states and sample groups in India

Variable	Unit	Andhra	Karnataka	Combined Average
Average revenue/acre for chilly for Akay farmers	INR/acre/year	101882.50	118444.1	110297.52
% change in average revenue/acre over control group	%	17.09	4.06	10.58
Average monthly household income for Akay farmers	INR/house/month	5401.10	11646.07	8488.89
Average before/after Akay household income change	%	15.65	75.38	50.39

Average change over control group	%	15.03	-14.67	
-----------------------------------	---	-------	--------	--

Figure 3. Impact on average annual revenue per acre of chilly grown by Akay contract farming N=358 (total), 178 (Andhra Pradesh), 180 (Karnataka); in INR thousands/acre/year

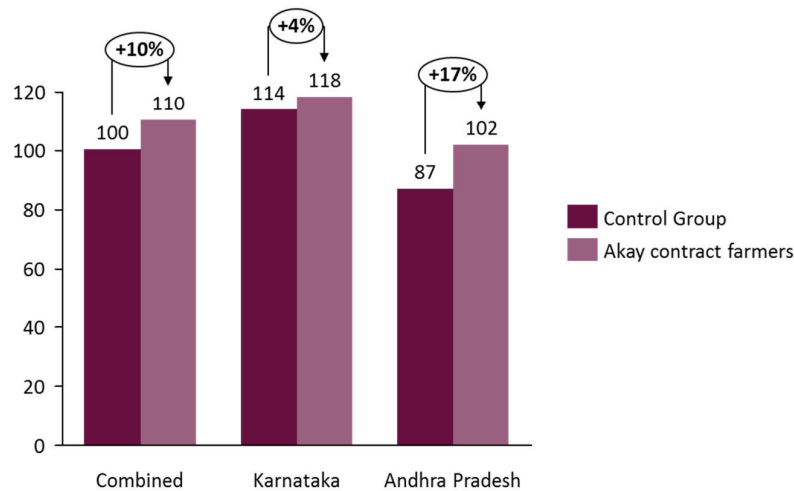


Table 7 shows two main types of income effects; of revenue earned through sale of farm produce to Akay, and household income changes before and after joining Akay as well as in the control groups. The results are mixed, and vary both by duration of engagement (Andhra vs. Karnataka) and between focus and control group. In both instances, there is a net increase in average revenue earned/acre of chilly grown for Akay, as compared to non-contract, non-Akay farmers. In Andhra Pradesh, after 1 year of contract farming with Akay, farmers earned an average 17% greater revenue per acre of chilly grown over their control group peers, whereas farmers in Karnataka earned 4% more revenue than their control group counterparts at 10 years of Akay contract farming. These results indicate a general positive increase of 10.6% in revenue/acre of chilly across Akay farms in India, which is led by two underlying changes; increases in average selling price, as well as increases in average chilly yield<sup>16</sup> for Akay farmers compared to the control group. Overall, farmers in Andhra and Karnataka gained an average INR. 14873.40 (USD 247.89<sup>17</sup>) and INR. 4620.60 (USD 77.01) revenue, respectively, from their chilly growing for Akay, over the control group.

<sup>16</sup> As per survey results of 180 farmers contract farming for Akay for an average of 1-10 years.

<sup>17</sup> \$1 = INR 60

Figure 4. Impact on average monthly household income of contract farmers after joining Akay N=180 (total), 91 (Andhra Pradesh), 89 (Karnataka); In INR hundreds/month

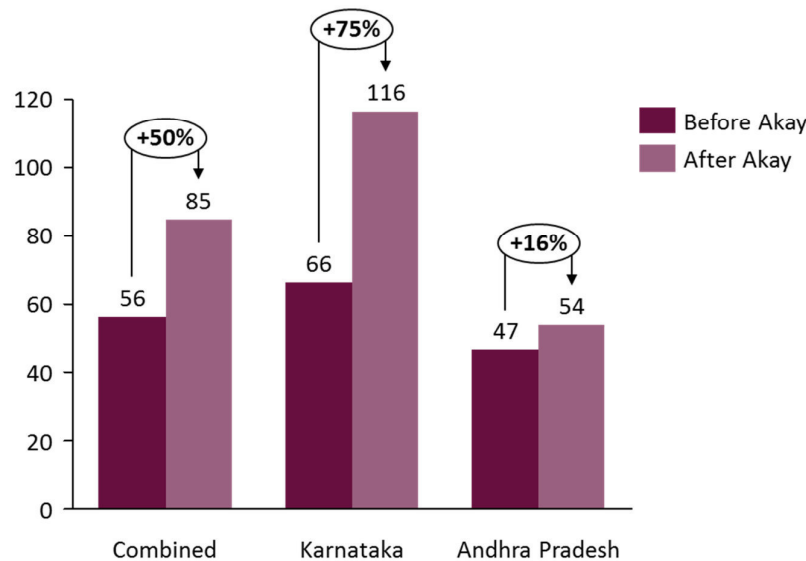
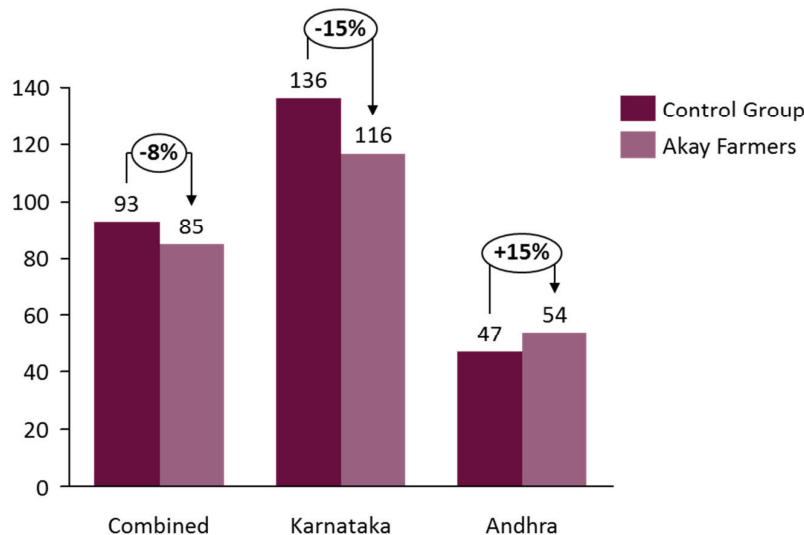


Figure 5. Impact on average monthly household income of Akay contract and independent farmers N=358 (total), 178 (Andhra Pradesh), 180 (Karnataka); in INR hundreds/month



Figures 4 and 5 show impacts on household income for Akay farmers both before and after their engagement with Akay, as well as compared to the control group farmers. In Andhra, the household income of farmers increased 15% after 1 year of contract-farming for Akay, from INR. 4670.35 to INR. 5401.10/month, an increase of INR. 730.77 (USD 12.18), whereas in Karnataka household income increased 75% from INR 6640.45 to INR 11646.07, an increase of INR 5005.62 per month (USD 83.5) after their average 10 year engagement with Akay. Akay farmers earned 15% more household income in Andhra than their control group peers, but 14% **less** than the control group in Karnataka. On average, households of Akay farmers brought in 50% more income compared to their household before becoming contract-farmers for Akay. This data suggests that either through their direct contract association with Akay, or through indirect increases through capacity building and



increased market access, Akay's contract farmers in Andhra Pradesh and Karnataka have witnessed significant household income increases since working for Akay Spices.<sup>18</sup>

At Akay's spice processing facilities, Akay pays its workers an average INR 250/day (USD 4.17/day). Men and women receive the same wages. In comparison, agricultural workers in Andhra Pradesh, according to a 2013 Labor Bureau report<sup>19</sup>, receive an average of INR 271.26/day, and farmers in Andhra receive an average of INR 218.75/day statewide. Akay's wage rate for its facility workers is less than the average rates paid to agricultural workers in Andhra Pradesh, but more than workers in Karnataka.

### Cambodia observed income-impact

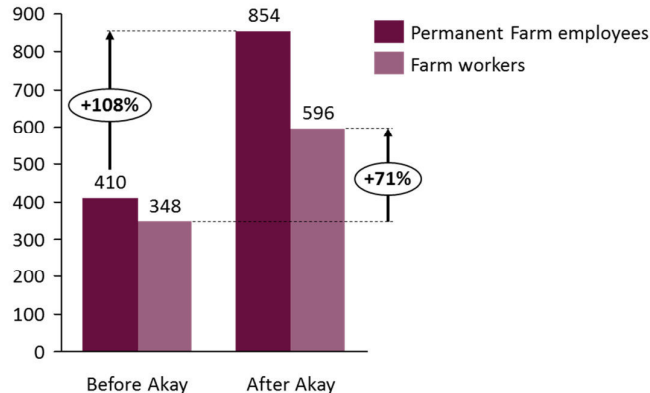
Our survey results indicate income increases across the board for Akay permanent employees and farm workers currently employed by Akay in Cambodia.

Table 8. Model Farm income impact on employees and workers

Average Monthly Wage	Before Akay (KHR)	In USD	After Akay (KHR)	In USD	Change (%)
Permanent employees	410000	101.45	853846.15	211.27	108.26
Farm Workers	347800	86.06	596000	147.47	71.36

Figure 6. Impact of working with Akay on monthly wages

N= 51 (total), 26 (Permanent Employees), 25 (Farm Workers); In KHR thousands



<sup>18</sup> Though Akay farmers in Karnataka witnessed increases in average revenue/acre of chilly of grown, as well as increases in household income after joining Akay, they performed below the Andhra average against their control group despite their 10 year association with Akay. For example, their average household income was 15% less than the average household income reported by the control group in Karnataka, and their revenue only 4% higher (as compared to a 17% increment for Andhra Akay farmers). One reason for this could be that farmers in the districts surveyed in Karnataka have generally done well regardless of their association with Akay, with comparable yields, prices and higher household incomes. It could also be true that the control farmers were themselves associated with other cooperatives or agro companies that provided them with fair pricing and market access, along with other facilities that contribute to higher household income. Similarly, it is also possible that the infrastructure facilities, market access and local economy created by Akay in these districts in Karnataka have had significant spill-over effects to the local community and non-contract farmers, taking them along on the improvements dedicated to Akay's contract farmers. We cannot be certain of the specific cause without collecting more data and conducting further analysis.

<sup>19</sup> Indian Labor Bureau Report, 2013; [http://labourbureau.nic.in/WRR1\\_JAN13.pdf](http://labourbureau.nic.in/WRR1_JAN13.pdf)

Permanent employees at Akay's farm and facilities in Battambang saw a 108% average increase in wages after becoming employed under Akay, while farm workers witnessed 71% increase in their wages after being hired by Akay. Akay currently pays its farm employees a wage of USD 5/day, or roughly USD 130 per working month (26 days). In comparison, the average minimum wage in Cambodia (2011), is USD61/month<sup>20</sup>. Even workers in the country's largest formal industry by employment, garments, earned an average of USD65/month<sup>21</sup>, significantly lower than Akay's employees in rural Cambodia. Akay farm employees and seasonal farm workers receive wages 245%, and 141% higher than the national minimum wage, respectively. This demonstrates strong **positive income impacts** under Akay's employment, and demonstrates the significant premium over minimum wage, and other formal economy benchmarks of low-semi skilled labor, paid by Akay to its employees in Cambodia.

### Expected impact on prospective contract farmers in Cambodia

Table 9 shows the projected increase of household income for prospective farmers in Battambang province in Cambodia, if the average rate of increase observed over 1 year in Andhra Pradesh were applied to Cambodia<sup>22</sup>. Currently, the average monthly household income of the prospective farmers surveyed in Samlot is USD 167.36 per household/month, which is 6.04% less than the international poverty line/month/household of USD 178.125. The projected increase of 15.04% would bring the average household 8.09% above the poverty line, by increasing household income to USD 192.5/month. It should be noted that the actual income increases could be much higher than projections based on income increase averages in India due to different climates, yields and market conditions in Cambodia. The next section highlights Akay's own projections of the annual income earned by prospective contract farmers.

Table 9. Cambodia Prospective farmer's baseline and expected income change

Variable	Current reported (KHR)	Current reported (USD <sup>23</sup> )	After projected increase of 15.04% <sup>24</sup> (USD)	% Difference with International Poverty line/household/month <sup>25</sup> = USD 178.125
Average household income/month <sup>26</sup>	676368.42	167.36	192.53	Before: -6.04 After: +8.09

<sup>20</sup> [Perinelli, B., Alarm, VA \(2011\), Minimum Wage Compliance Report in Cambodia, Wage Indicator Report August 2011](#). Amsterdam, The Netherlands: Wage Indicator Foundation.

<sup>21</sup> Daily wage rate of USD2.71 X 24 (6 working days/week) = USD65.

<sup>22</sup> This is for reference purpose only, since actual income increases could vary upon local circumstances and market forces

<sup>23</sup> \$1 = 4041.47 KHR

<sup>24</sup> Average household income increase before/after Akay observed in Andhra Pradesh

<sup>25</sup> (\$1.25/day/person X average survey household size in Cambodia X 30). Source: World Bank; <http://data.worldbank.org/topic/poverty>

<sup>26</sup> As per survey of 194 prospective farmers in Samlot District, Battambang Province, Cambodia

## 4. REACH OF THE PROJECT

In Cambodia, the Akay extraction plant will, by 2018, process spices from their 720 hectare farm in Battambang province involving 10,000 contract farmers. The project activities are geared towards increasing production of high-value spice products with raw produce to be sourced from an increased number of farmers. In India, the project reach is expected to increase from 280 in FY2014 to at least 540 non-farm jobs in FY2018. Number of farmers working under contract farming will increase from 3,000 in FY2014 to 6,000 in FY2018. In addition, at least 5000 non-contract farmers are expected to be impacted by Akay's open market procurement policy for spices by 2018. In Cambodia, Akay's farm employees will increase from 30 in FY2014 to at least 80 in FY2018 and the farmers working under contract farming will increase from zero in 2013 to 2,000 in FY2018, and to an estimated 10,000 in the long-term beyond FY2018<sup>27</sup>.

Table 10. Reach of Akay's expansion activities<sup>28</sup>

	FY2014	FY2018	Post FY2018 (estimated)
<b>India:</b>			
Contract-farmers	3,000	6,000	
Non-farm jobs	280	540	
Non-contract farmers		5000 <sup>29</sup>	
<b>Cambodia:</b>			
Contract-farmers	0	2,000	10,000
Farm Employees	30	80	
Seasonal farm workers	200	400	

### Impact on socioeconomic status

Our survey of potential beneficiaries in Cambodia provides a gauge of the socioeconomic status of direct beneficiaries of this project in 'Year 0', or before the project. Moving forward, Akay's outgrower model provides us with the estimated net income per farmer from year 1 through 6.

The results from the India survey can also provide some guidance on the socioeconomic status of Akay contract farmers at later stages of the contract farming arrangement. It is, however, to be noted that initial conditions in Cambodia, Andhra Pradesh and Karnataka are likely to have had differences and thus such a comparison can only be indicative in nature. Many of the indicators, such as electricity and piped water connections, are dependent on government provision and differ accordingly.

The average monthly household income of 194 prospective contract farmers surveyed in Prey Thom village, Samlot District, Battambang Province is ~676,368 KHR or USD 167<sup>30</sup>, which translates to a

<sup>27</sup> This is an estimate that has been provided by Akay Spices. The timeframe for 'long-term' has not been defined by them.

<sup>28</sup> Akay's contract farmer reach numbers are derived from total expected farmer households contracted by Akay. The average household size of farmers was assumed to be 2 (one man one woman). 1500 farmer households are currently contracted by Akay in India, which is expected to double to 3000 households by 2018. This gives us total contract-farmer reach in India to be 3000 in FY14' and 6000 in FY18. Similarly in Cambodia, 1000 farming households are expected to be contracted by Akay by FY18', which gives a total contract farmer reach number of 2,000 farmers.

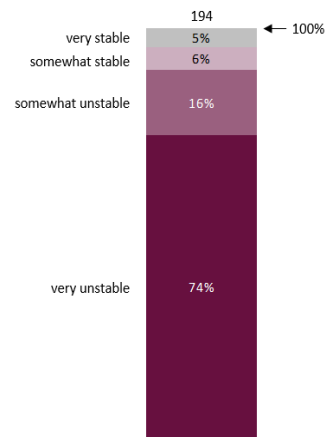
<sup>29</sup> Result of Akay's plans for open-market procurement policy for its new spice extraction plants

<sup>30</sup> \$1 = 4041.47 KHR

daily household income of ~USD 5.6. The average household size of farmers surveyed is 4.75 members per household. Given this average, the daily per capita income of those living in these households is ~USD 1.17 per day – putting them under the World Bank’s extreme poverty line of USD 1.25 per person per day. This income is also unstable, with over 70% of respondents categorizing their income as very unstable, as can be seen in Figure 5. There is also a lack of avenues to save due to a low rate of financial inclusion, as 98% of the respondents lack a bank account.

Figure 7. Stability of income of prospective contract farmers in Cambodia

N=194



Other indicators point towards conditions of poverty too. Approximately 95% of survey respondents reside in homes made of natural materials, with the remaining 5% residing in homes made of cement or brick. Only ~17% of survey respondents have an electricity connection in their home. 14% of respondents have a toilet in their home, and 3% of these toilets have a septic tank. None of the respondents have a piped water connection in their homes. The average distance to a health centre is approximately 32 km, and average distance to a market approximately 7 km.

Living at a distance from primary healthcare leads to greater transport costs, which have a large impact on the base of the pyramid. The mean expenditure on healthcare (first treatment) in Battambang province is USD 38.11, 25% higher than the corresponding mean expenditure for Cambodia as a whole, which is USD 30.49. The mean expenditure on healthcare (second treatment) is even higher – at USD 59.32, it is 35% greater than the corresponding USD 43.92 prevalent for Cambodia.<sup>31</sup> As these figures include transportation costs, a health centre nearby should substantially lower cost of treatment for the residents of Samlot district.

### Socio-economic status in the future

According to Akay’s estimates, the average annual net income of each farmer in Year 1 will be approximately USD 3,370, which translates to a monthly income of ~USD 280. This income rises at a compound annual growth rate (CAGR) of 27% to reach ~USD 11,320 per annum, or ~USD 940 per month by Year 6. A detailed breakup is provided in Table 6, below.

Table 11. Income and costs of an individual Akay contract farmer in Cambodia<sup>32</sup>

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Total income from Akay	5,600	5,600	9,800	9,800	9,800	13,550

<sup>31</sup> ‘Cambodia Demographic and Health Survey’, 2010

<sup>32</sup> ‘Outgrowers Model’, Akay

<b>Total cost</b>	2,232.50	2,232/50	3,799.17	3,799.17	3,799.17	2,232.5
<b>Net income</b>	3,367.50	3,367.50	6,000.83	6,000.83	6,000.83	11,317.50
<b>Average monthly income<sup>33</sup></b>	281	281	500	500	500	943

Aside from income, there are three key socio-economic indicators on which the project is expected to have a direct positive impact - health, electricity and education. As part of the outgrower scheme, Akay plans to build a 20 bed healthcare clinic for every 1,000 contract farmers, drastically reducing distance of the population from a health centre and subsequently their transport costs. To improve access to electricity, a windmill will be built per 1,000 contract farmers, for which Akay will bear 50% of the cost, with the remainder being split *pro rata* across farmers. Akay is already in the process of installing 2 50 kWh windmills as a pilot trial to provide electricity to the model farm and extending the electricity supply to the surrounding village.<sup>34</sup> This would allow farmers to use relatively advanced irrigation equipment, while reducing the financial burden of grid expansion on Akay. Moreover, our survey indicates a need for electricity in the village as only 16.5% of respondents claimed to have an electricity connection in their house. Akay will also build a school per 1,000 farmers.

The beneficiaries of these measures will be the contract farmers and their families. The average household size of households surveyed in Prey Thom Village, Asothe, Cambodia is 4.75 members. A rough estimate of the number of beneficiaries of the above three measures would then be around 4,750 beneficiaries per measure. As the outgrower scheme expands to its ultimate long-term<sup>35</sup> goal of 10,000 farmers in the area, the total number of beneficiaries of these measures of access to health, power and education would be approximately 47,500 people.

One indicator on which the project has already had an impact is the value of the land surrounding the model farm – approximately 55% of respondents in Cambodia have seen the value of their land rise since the establishment of the farm. An increase in the value of land coupled with greater financial inclusion could expand the access to credit of the population (as the land could be used as collateral). While our surveys did not reveal the intent of farmers with reference to their land, if farmers were to sell it, they would receive better prices than they would have before Akay set up the model farm in Samlot.

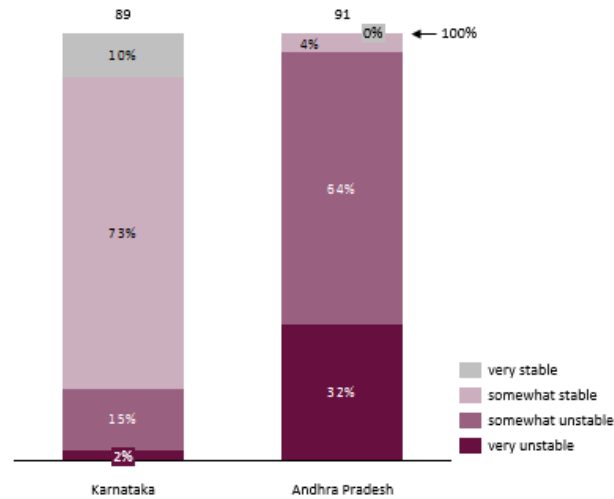
As discussed earlier, working for Akay has increased household income for contract farmers in India. Akay contract farmers in India also fare better on many other of the aforementioned indicators. In both Andhra Pradesh and Karnataka, 100% of respondents have electricity connections in their homes. There is a disparity between the states in the distribution of toilets. ~71% of respondents in Andhra Pradesh have toilets in their homes, compared to only 2% of respondents in Karnataka. ~30% of respondents in Andhra Pradesh have a piped water connection, as opposed to ~44% in Karnataka. Karnataka fares far better than Andhra Pradesh on income stability, with over 70% of Karnataka respondents claiming a 'somewhat stable' income. Comparatively, in Andhra Pradesh, over 60% of respondents claimed to have a 'somewhat unstable' income and ~30% claimed to have a 'very unstable' income. Both states fare better than the Cambodian farmers in financial inclusion – 58% of the Akay farmers in Karnataka have a bank account, while 98% of Akay farmers in Andhra Pradesh have a bank account.

<sup>33</sup> Average monthly income is the annual income spread out over 12 months.

<sup>34</sup> 'Akay Cambodia Social Development Efforts, 2013'

<sup>35</sup> Akay has not provided a time-frame for achievement of this goal

Figure 8. Stability of income of Akay contract farmers in India  
N=89 (Karnataka), 91 (Andhra Pradesh)



When analysing disparities between Andhra Pradesh and Karnataka, it is important to bear in mind that many of these indicators require inputs from actors that may be beyond Akay's sphere of influence, such as local governments and public bodies for infrastructure.

In conclusion, while the predominant driver of socio-economic betterment of farmers in Cambodia will be the substantial increase in their income, improved access to basic services such as banking, healthcare and electricity will also play a key role in raising their socio-economic status. Based on Akay's plans for inclusive growth, and socio-economic indicators of its current contract farmers in India, we believe this project can have a large positive impact on the socio-economic status of farmers in Battambang province.

## 5. DEPTH OF THE PROJECT IMPACT

This section aims to analyse the potential rise in income for farmers associated with Akay, and derive a broader understanding of the various uses of this incremental income. This analysis will be based on the 180 farmers surveyed in India that currently work on contract for Akay, and used to predict ex-ante the potential impact on the prospective farmers in Samlot District, Battambang Province, Cambodia.

In India, there is a noticeable difference between the poverty situation of farmers in Karnataka and farmers in Andhra Pradesh. Only 3% of farmers in Karnataka, who have been with Akay for an average of 10 years, are still under the approximated extreme poverty line of USD1.55/day, 31% earn less than USD2.33/day, and 56% earn less than USD3.1/day. Approximately 44% of contract-farmers in Karnataka are above the USD3/day poverty line. In Andhra Pradesh, after a short 1 year average engagement with Akay, 69% of farmers are under the approximated extreme poverty line, 87% under USD2.33/day line, and 98% under USD3.1/day line. A majority of contract-farmers in Andhra Pradesh are therefore extremely poor, and almost all of them are in a poverty situation.

In Cambodia, 27% of prospective farmers currently fall under the approximated extreme poverty line of USD1.3/day, 48% under USD 1.96/day, and 76% under USD3.26/day. 76% of survey respondents who are poor by cumulative standards, and 27% who are extremely poor, present Akay the opportunity to uplift them from poverty by enabling them to earn higher farm revenues and stabilize the receipt of higher household incomes. This poverty alleviation is demonstrated through the permanent employees and season farm workers already employed by Akay on its model farm in Asothe in Battambang province in Cambodia, all of who earn daily incomes higher than USD~2/day. Only 4% of permanent employees, or 12 people, earned incomes lower than USD3.26/day.

Table 12. Expected depth of Akay's expansion in India and Cambodia<sup>36</sup>

	International Poverty lines (USD)	<1.25	<2	<3
	Approximate Poverty lines from survey income range (USD)	<1.55	<2.33	<3.1
	Total sample	% Under	% Under	% Under
<b>India</b>	180	37%	59%	77%
Karnataka Contract farmers (surveyed)	89	3%	31%	56%
Andhra Contract farmers (surveyed)	91	69%	87%	98%
	Approximate Poverty lines from survey income range (USD)	<1.3	<1.96	<3.26
<b>Cambodia</b>				
Prospective Contract farmers (surveyed)	194	27%	48%	76%
Permanent employees (surveyed)	30	0%	0%	4%

<sup>36</sup> Average poverty lines used from the survey are only rough estimates because of use of lower ranges, instead of the medians, because false positives were considered safer for project purposes than false negatives (by roughly overestimating the number of poor people, instead of underestimating them)

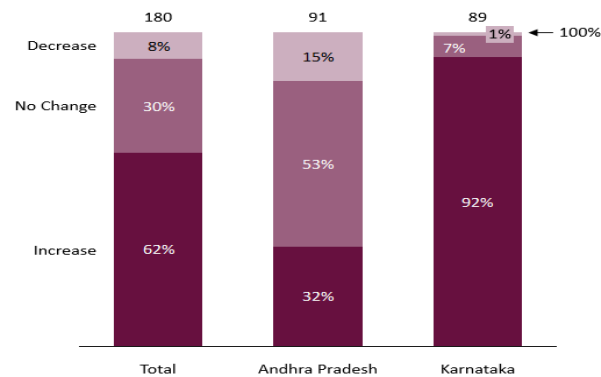
Farm workers (surveyed)	20	0%	0%	0%
-------------------------	----	----	----	----

	Total responses	<USD1.25	<USD2	<USD3
India Women farmers N=51	36	44%	50%	64%

### Impact on income in India

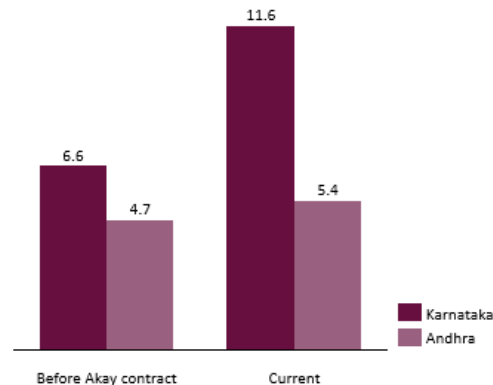
As highlighted below in Figure 9, 62% of the farmers (111 in number) surveyed reported that working with Akay had led to an increase in their income (with 8% reporting a 'big increase'). The results vary between Andhra Pradesh and Karnataka, with a far greater proportion of Karnataka farmers (92%) reporting an increase in their income as opposed to 32% in Andhra Pradesh reporting an increase. 53% of farmers in Andhra Pradesh reported no change in income. 53% of farmers in Andhra Pradesh reported no change in income.

Figure 9. Impact of working with Akay on income, as reported by farmers  
N=180 (total), 91 (Andhra Pradesh), 89 (Karnataka)



The observed impact on average monthly household income is positive too. As shown in Figure 8, average monthly household income increased by approximately 50% after beginning contract farming with Akay. In Andhra Pradesh, where the average tenure with Akay has been 1 year, the average increase has been approximately 16%. In Karnataka, the average tenure of farmers with Akay has been 10 years, the average income increase has been 75%, at an approximate CAGR of 6% per annum.

Figure 10. Average monthly household income before and after contract with Akay  
N= 91 (Andhra Pradesh), 89 (Karnataka); in thousand INR;  
Average length of contract= 1 year (Andhra Pradesh), 10 years (Karnataka)





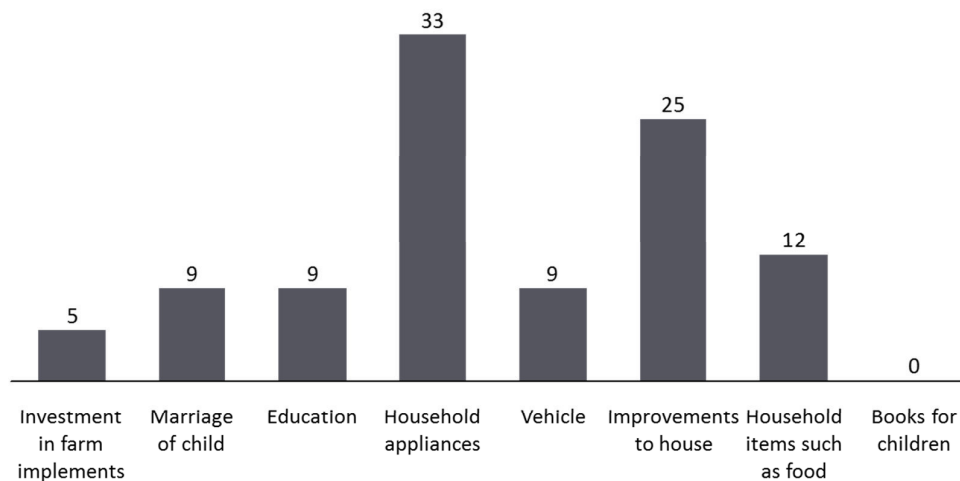
### Uses of additional income

There has been a wide range of areas on which the additional income earned by contract farmers has been spent. Expenditure on improving the house is the most common, followed by agricultural implements, education, household appliances (such as television, fans, small refrigerators, etc.) and household items. It is interesting to note is that the bulk of respondents have not spent their additional income solely on food but on the aforementioned items, hinting at a rise in disposable income or a reduction in their poverty situation.

*Figure 11. Uses of incremental income by contract chilly farmers in India*

N=160

% respondents who would spend on respective categories of items



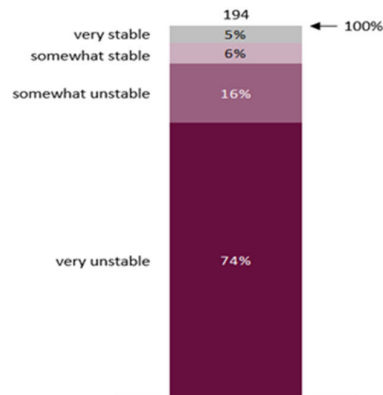
### Translation of impact to Cambodia

The survey results from India suggest a significant positive income impact from working on contract for Akay in both the short and long term. Although this section focuses primarily on the situation of prospective farmers in Cambodia, one can expect a similar level of impact to translate to Indian contract farmers too based on the measured impact in India.

The average monthly household income of 194 prospective contract farmers surveyed in Prey Thom village, Samlot District, Battambang Province is ~676,368 KHR or USD 167, which translates to a daily household income of ~USD 5.6. The average household size of farmers surveyed is 4.75 members per household. Given this average, the daily per capita income of those living in these households is ~USD 1.17 per day.

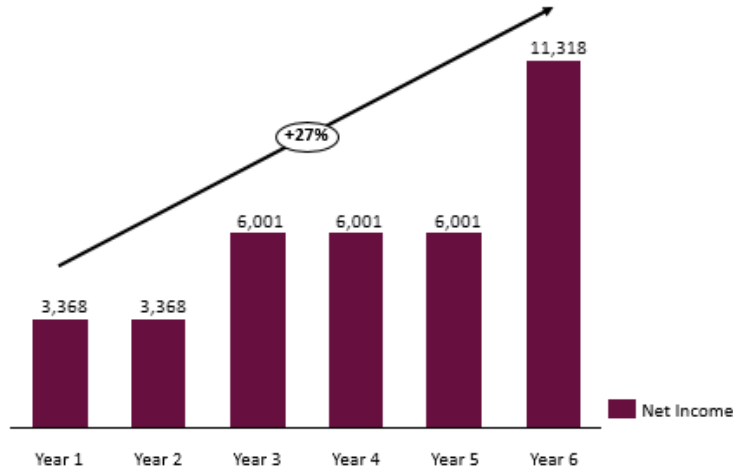
Moreover, survey respondents reported their income stability to be extremely low, with over 70% of respondents citing their income as very unstable (see Figure 12).

Figure 12. Stability of income of prospective contract farmers in Cambodia  
N=194



Evidence of significant income increases from the field survey (see Figure 10) in India suggests that contract farming arrangements such as Akay's could go a long way in helping lift farmers in Samlot District, Battambang Province out of poverty. Contract farming also insulates farmers from external price shocks, as the price is decided beforehand, leading to greater stability of income. Figure 13 describes Akay's own projected income for individual prospective farmers, and it grows at a compound annual growth rate of 27% over 6 years.

Figure 13. Projected annual net income of a contract farmer<sup>37</sup>  
in USD



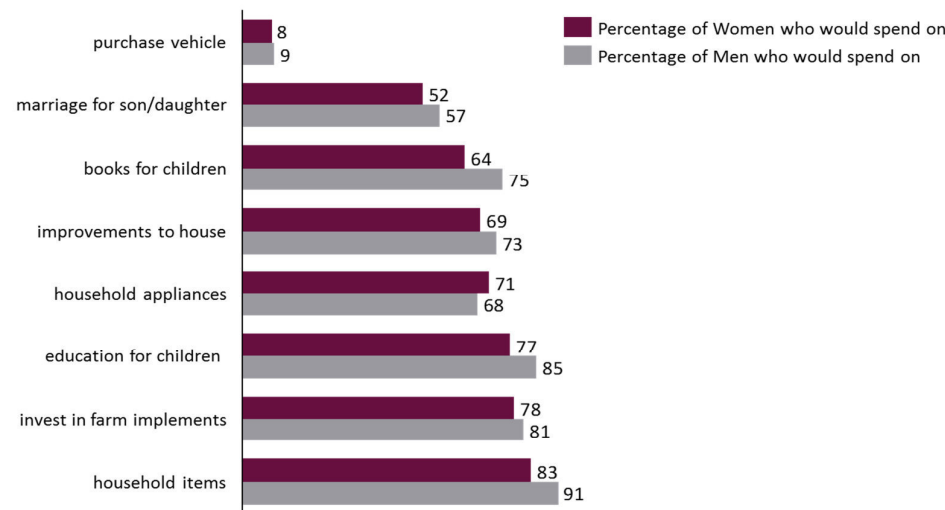
The contract farmers are expected to grow four crops – rubber and black pepper as long term crops along with coleus and turmeric as intermediate crops. Akay estimates that it will be able to purchase black pepper from farmers in Year 3, and rubber in Year 6 – hence the substantial jumps in estimated annual income accruing to farmers in these years (see Figure 13).

Akay will also be bearing the cost of seeds, with the costs for long term crops such as rubber and black pepper being borne one time and the costs for intermediate crops such as turmeric and coleus borne on an annual basis.

<sup>37</sup> 'Outgrowers Model', Akay

Figure 14 highlights the distribution of purposes that their incremental income would be used for. The interesting difference to note between this and Figure 9 is that the highest proportion of responses in the Cambodia survey have been given in favour of household items such as food, followed by education, indicating that basic requirements of the prospective farmers in Cambodia may be unfulfilled.

*Figure 14. Uses of incremental income by prospective contract farmers in Cambodia*  
N=1018 (Multiple responses by 184 farmers; responses not mutually exclusive)



## 6. SYSTEMIC IMPACT OF AKAY EXPANSION PLANS

The employment, income generating and human capital development activities of Akay are expected to have positive externalities in its community systems in Cambodia and India. Some of these have already been witnessed, while others are predicted to have impact in the medium and long term duration of Akay's involvement in farming systems. Akay's systemic impacts can be divided into 4 categories of:

- a. Promoting equity
- b. Supporting pro-poor networks
- c. Ownership by the poor & enterprise development
- d. Sustainability, and long-term community impacts

### ***a. Promoting equity***

In rural communities in the developing world, the biggest disparity in equitable opportunity is between men and women. Women typically receive less education, training, job opportunities and labor wages than their male counterparts<sup>38</sup> and are a disproportionately significant part of the poor. Akay has attempted to alleviate these inequities through a variety of interventions, both directly through income increases and indirectly through provision of essential services and infrastructure required for socioeconomic development.

Akay reports that more than 70% (280) of their farm staff of 400, including the 200 seasonal staff at Asothe, Cambodia, are women<sup>39</sup>, and our survey revealed that 83 of the 194 (43%) prospective farmers around their Asothe model farmers were women too. Inclusion in Akay's farming and farm-support activities gives women the chance to participate in productive economic activity and take fair wages home to support their household expenses.

Since women are usually in charge independently or jointly with spouses (94% of prospective farmer respondents in Cambodia reported to have joint control over family expenses<sup>40</sup>), of household affairs and expenses, empowering them economically has been known to translate to direct gains in education for children, reproductive health and nutrition for the family<sup>41</sup>. In addition to direct economic engagement, Akay has created a self-sufficient community in Tadas, North Karnataka led by empowered women, built schools for their children and improved local infrastructure used by both men and women.<sup>42</sup> Here, for example, Akay introduced the practice of paying women weekly, on every Saturday<sup>43</sup>, so they could directly procure household items at the end of the work-week, not depend on their spouses to allocate funds for purchases, and resist the pressure of allocating their income to their husband over the household.

According to Akay, its social programs in Tadas have been mutually beneficial for the company and its farmers. Akay has been able to increase the volume of raw material sourcing and extraction operations through close association with the Chilly farmers in Karnataka. The satisfaction of farmers and their confidence in Akay has had positive impacts on Akay's business. For example, trust between farmers and the company has allowed for greater transparency in communication and

---

<sup>38</sup> Food and Agriculture Organization (FAO), Gender Equity in Agriculture Guide; <ftp://ftp.fao.org/docrep/fao/012/i1240e/i1240e00.pdf>

<sup>39</sup> Page 2, Akay Cambodia Social Development efforts PDF.

<sup>40</sup> Question 58, "who has control over family expenses?" Cambodia Prospective contract farmers

<sup>41</sup> IFPRI; <http://www.ifpri.org/sites/default/files/publications/ifpridp01294.pdf>

<sup>42</sup> Page 3, Akay Cambodia Social Development efforts PDF

<sup>43</sup> Page 31, Project report on expansion plans of Akay group in Cambodia

trade, resulting in improvement in overall quality of crucial export-grade raw material processed by Akay.

Akay's social commitments tie-in closely to its business model. Akay has committed to improving living standards of its farmers and their community by providing social benefits to farmers both directly; through facilities it builds for communities to increase living standards, and indirectly; by building infrastructure for itself that is used as a public good by the community. These activities increase farmer loyalty, and can result in better health and productivity outcomes of farmers. Survey results from Karnataka confirm the loyalty-effect of Akay's interventions, where farmers overwhelmingly express satisfaction with their engagement with Akay.

At Akay's model farm in Asothe, Cambodia, the company provides all staff free housing; independent female staff workers receive separate quarters from men (ensuring safety and privacy), and women as part of a household receive housing with their family. Finally, Akay provides child-care facilities at the model farms so women can be productively engaged while a dedicated caretaker takes care of their young children. These initiatives make a better work environment for working, young-mothers and reduce the opportunity cost of their employment on their households. Finally, including women into the fold of productive activities and linking them with the local farmer network can have multiplier effects in terms of confidence building, social and political participation at the local level, and exchange of information and ideas with gender parity<sup>44</sup>.

#### ***b. Supporting pro-poor networks***

Pro-poor networks can be enabled and expanded through direct and indirect intervention in network creation and integration. Akay emphasizes its social development responsibility which it implements by creating direct economic opportunity for poor farmers (all of who are, on average, below the international poverty line of USD 2/day prior to joining Akay<sup>45</sup>). Contracting farmers, and aggregating their outputs under Akay's umbrella connects previously disjointed and subsistence farmers into the formal market economy of organic spices, and by doing so links the demand and prices for their products with the international market. The farmer's integration into the international market involves both a direct supplier relationship with it, as well as de facto improvements in farming methodologies up to international organic market standards adopted by Akay. As reported in the India farmer surveys<sup>46</sup>, farmers as a result get better prices for their produce as compared to local markets, improve their yields<sup>47</sup>, and reduce their dependence on fertilizers, insecticides and pesticides because of organic-technology intervention. Though integrating farmer networks into the larger market potentially opens them to risks of price volatility, Akay's pre-fixed contract prices<sup>48</sup> hedges against erratic movements in the market.

Akay provides extensive training to all its contract farmers in learning multi-cropping, weeding and soil management, as well as the use of new machinery, installation of drip-irrigation systems (providing monetary credit for the same) and using organic substitutes for farm chemicals<sup>49</sup>. 57% of contract farmers in Andhra who joined the contract scheme in the past 1 year and 100% of

---

<sup>44</sup> "Women's employment, empowerment, and globalization: an economic perspective," Elissa Braunstein, 2008; <http://www.un.org/womenwatch/daw/ws2009/documents/EC-WSRWD-2008-EP3%20Braunstein%2026Feb09.pdf>

<sup>45</sup> Credit Suisse, 'Assignment brief for cooperation with ADB on Market Study for Spices and poverty impact analysis in India and Cambodia'

<sup>46</sup> Question 25, "Selling price of crop," India chilly farmer survey

<sup>47</sup> It must be noted, however, that increase in total yields in India is largely due to increases in total landholding under cultivation per farmer; Indian chilly farmer survey

<sup>48</sup> Akay Outgrowers Model

<sup>49</sup> Page 33, 'Project report on expansion plans of Akay group in Cambodia'

permanent farm employees surveyed in Samlot reported receiving training from Akay of some sort. Technical training helps spread up-to-date information and best practices of the industry among farmer networks who can then utilize the information according to their specific needs. Introducing scientific and economic information into networks of poor people also lessens information asymmetry that typically forces farmers to rely on third parties for basic knowledge, and increases their self-reliance.

At its contract-farming set-up in Asothe, Cambodia, Akay plans to spend a total of USD150,000 per year on its training center and training activities. The in-house training sessions will be inclusive of accommodation, a USD200 stipend per farmer, and USD100 worth of food for the farmers, who will attend these sessions once, for the first month of the first year of contracting with Akay. This all-inclusive package would ensure a smaller opportunity cost of attending the 1-month training session in terms of lost labor and income, and add technical skills and knowhow to the individual farmer, and farmer community, knowledge bank.

Akay plans to spend a total of USD 585,000 – USD 500,000 on windmills, USD 75,000 on schools, and USD 10,000 on healthcare clinics - on social and energy infrastructure in year 3 of the project (FY18). This expenditure equals a per capita expenditure of USD58.59 on education for the children of farmers, and USD7.81 on healthcare facilities. The creation of physical infrastructure – roads, schools, housing, health-care clinics - as demonstrated and planned by Akay in India and Cambodia<sup>50</sup>, respectively, can have major impacts on empowering poor communities, and expanding their productive outreach to surrounding economies. For example, Akay has reported a steady and significant influx of approximately 10,000 poor farmers, traders, etc. into Asothe, since the development of road infrastructure in and out of Asothe<sup>51</sup>. The improvement of local roads has been confirmed by survey respondents in Karnataka as well as Samlot, Cambodia. While roads can help move people and goods in and out of remote areas, as they are observed to be doing around contract farms, schools, housing, health-care clinics and other social infrastructure can improve the living standards of poor people, and by providing the same for free or a subsidized rate, increase their disposable income which can be saved for long-term needs of households (such as daughter's marriage or children's college). In this respect, 96% of permanent farm employees at the model farm in Asothe reported improvements in roads, and 100% of them agreed to improvements in water, health services, education for children and reduction in land mines in the village.<sup>52</sup>

Survey results from Andhra and Karnataka point towards a positive development in the farmer's utilization of his incremental income gained from association with Akay. 52% of all contract-farmer respondents in India reported to have spent part of their incremental income on improvement to the house, and towards better farm implements. 20%, each, spent part of their incremental income on a new vehicle, household appliances, and on their children's education<sup>53</sup>. Akay's systemic impact, through the instrument of higher farmer incomes, has expanded the capacity of farmers to make necessary investments in upgrading living standards, as well as boosting the local economy by increasing the purchasing power of farmers. To this date, Akay has spent approximately INR 8million (USD~133,333) towards social development at its model village in Tadas, Karnataka.

### ***c. Ownership by the poor and enterprise development***

Akay's in-field training program with Battambang University, Department of Agriculture, sends graduate students to work on the Akay farm to learn practices and share their inputs. This system

---

<sup>50</sup> Page 34, *ibid*

<sup>51</sup> Page 6, 'Akay Cambodia Social Development efforts'

<sup>52</sup> Questions 46-50, Akay Permanent Employees survey

<sup>53</sup> Question 63, India chilly farmer survey

encourages the widening of pro-poor networks by introducing academic knowledge and methods through visiting student agents. For example, Akay has already reported on positive effects of introducing machinery in farming practices at their Asothe model farm. Apart from the direct time-savings, Akay has observed increased participation and involvement of farmers in designing and building low-cost machinery for their use<sup>54</sup>. Akay promises to provide financial assistance towards setting up of schools, windmills and healthcare clinics, which will then be funded by the farmer after FY 18 towards shared-ownership of these facilities<sup>55</sup>. Shared ownership and cost-burden would help Akay farmers in setting up energy and social facilities whose economic and social gains would be absorbed by Akay and the farmer community jointly. While reducing the initial cost-burden on the farmers, the long-term view of ownership of facilities can bring a sense of ownership among the farmers and employees, and enable them to have control over local outcomes adjusted to local needs towards energy, education and health. A sense of ownership is likely to foster a stronger community and social cohesion, as well as loyalty between Akay and its contractors that encourages reinvestment into the local community.

Evidence from Akay, and from external case studies<sup>56</sup> suggests that with the introduction of technology, the upgradation of capacity to use the technology, and provision of physical infrastructure to support innovation, there is increased opportunity for enterprise development in regions surrounding Akay's facilities. If Akay extends its support towards small-scale IT grids in its model farm, farmer networks can leverage cheap communication and information access towards entrepreneurial interests. It is logical to assume that the spill-over effects of higher wages, farm income, productive capacity and infrastructure will in-turn create further economic opportunities in surrounding areas, and encourage the formation of self-help and independent enterprises catering to rising demand and incomes.

#### ***d. Sustainability, and long-term community impacts***

Environmental sustainability of project operation and its ecological impact has major impact-potential on rural social and economic systems. The organic farming model can strengthen network capacity by restoring ecosystems and sustainably managing resources for guaranteed long-term returns on the land – reducing the long-term burden of resource exhaustion, nutrient depletion and chemical leeching on the local community. The reduction of farm chemicals (insecticides, pesticides and fertilizers) in farming system reduces the aggregation of these chemicals into the local ecology which can otherwise pollute fresh water systems and animal food chains. Reducing the short and medium-term cost borne by the ecology, and making current impact as sustainable as possible, ensures that farmers in Samlot district will not be deprived off the carrying capacity of their land and ecosystem in the long run. Most importantly, environmentally-sustainable practice ensures better health for locals, their children, livestock and ecosystem in the long run, further reducing the cost of externalities of Akay's farming system compared to other intensive systems.

Akay's organic certification from INDOCERT for growing 7 types of products at the Asothe, and its ongoing compliance with standards requirements, ensures that globally-accepted organic farming practices are implemented within Akay's outgrower system. INDOCERT's requirement for compliance with the National Standards for Organic Production, specifically with regards to farm inputs of fertilizers, soil conditioners, and plant protection<sup>57</sup>, and its regular monitoring of the same,

---

<sup>54</sup> Page 39, 'Akay Cambodia Social Development efforts'

<sup>55</sup> Akay Outgrowers Model

<sup>56</sup> American Journal of Agricultural Economics; 'Impacts of Technology and Structural Change on Agricultural Economy, Rural Communities, and the Environment,' Lu, Yao-chi, 1985

<sup>57</sup> FAQ's, INDOCERT; <http://www.indocert.org/index.php/en/faq/organic-agriculture>

guarantees that the benefits of organic certification will be translated into on-the-ground environmentally system practices on out-grower farms.



## 7. RECOMMENDATIONS

### *Recommendations for monitoring impact*

There are a number of measures that Akay, due to its proximity and reach, can effectively take to monitor the impact of the project on the poverty situation of its beneficiaries. This section outlines some such measures and provides a rationale behind each. We recommend that this monitoring takes place on an annual basis.

#### **1. Basic income and expenditure information**

Implement monitoring system that collects data on farmer incomes and expenditure (divided broadly into food, energy, and non-food, non-energy items) only a monthly basis, which will help Akay keep track of the direct impact upon the income and wellbeing of beneficiaries

#### **2. Standards of living**

Akay should track indicators such as access to water, sanitation, healthcare and electricity. As observed in the India surveys, in improvement in income due to contract farming may not necessarily translate into the other indicators that determine socio-economic status.

#### **3. Financial inclusion**

Akay should track the number of contract farmers that have a bank account. Financial inclusion of outgrowers will simplify payments and loans made by Akay, while also providing avenues for savings and investment for account holders

#### **4. Satisfaction barometer**

Akay can track the satisfaction levels of farmers at regular intervals to measure the pulse of the project impact. The ability to respond to shifts in satisfaction will help farmer retention

#### **5. Attendance of training sessions**

Tracking attendance of training sessions will help Akay realise the utilization of its investment in training of farmers, and help identify gaps in provision and assimilation of knowledge. Only 4% of respondents in Karnataka claimed to have been provided training, and the corresponding figure was 52% in Andhra Pradesh.

#### **6. Gender inclusion**

Consult and survey women as an independent group to note the best gender-specific methods to fulfil essential needs. This will help account for gender norms and disparities when providing services, for example at a public space (training, etc.). Women often require reserved spaces for equitable distribution of public and private benefits

### *Recommendations for Akay business model*

Based on our survey results, we have identified a few areas in which Akay could improve its impact performance by making adjustments to its business model. These small modifications in strategy can empower Akay to use its impact instruments more effectively and systematically to improve social impact in its farming community in India and Cambodia;

#### **1. Social-impact maximization**

Our survey responses have indicated that Akay's outgrowers model has not had optimal impact on a few essential socioeconomic indicators in India; the provision of local and household infrastructure and access to banking facilities. Of the 190 contract farmers surveyed in Andhra and Karnataka, only 3% reported improvements in roads by Akay, 5% reported improvement in provision of electricity, and no respondents reported improvements in access to water, access to health care, education for children, access to bank accounts and loan facilities. Similarly, under household infrastructure indicators, 61% of all respondents (and 98% in Karnataka) still lived in homes made of natural

materials (predominantly mud and hay), only 37% had toilets in their homes, and only 37% had piped water. These infrastructural indicators are under the direct mandate of elected state governments and local implementation bodies, and Akay does not have direct responsibility of providing basic public goods to its farmers. Additionally, these are survey results of a small sample of 190 contract farmers, it is possible that many infrastructure improvements have not been captured by the sample group, or that the farmer's expectations of improvement were not met by actual results, leading them to respond negatively.

To increase its social impact, Akay can intervene in places of local government and market failure, and assist local authorities to work with stakeholders to build concrete houses, improve roads, and provide water and sanitation facilities to homes in the community. Credit facility for housing upgrades, for example, can assist in making household infrastructure more affordable for farmers. With respect to banking services, a large part of inaccessibility, beyond lack of banking outlets, is due to farmer illiteracy and unawareness of basic banking procedures. Akay can help bridge this capacity gap by providing financial literacy classes and assistance in filling out paperwork to empower its contract-farmers manage their finances better. These improvements in life standards and associated goodwill with it can encourage farmer loyalty to Akay, increase their satisfaction, and through this process, reduce farmer attrition and transaction costs in the contract-farming model.

## **2. Contract terms and pricing**

Another area that merits attention is the contract terms and pricing model of Akay. While our survey data does not empower us to make specific judgments on contract terms, responses to the open-ended question "Have you experienced any problems in your work with Akay?" in Andhra Pradesh revealed significant disaffection among farmers. The most popular responses to this question were "rate problem," "should have fixed market and rate," "should buy crop quickly," which suggest that contract farmers in Andhra are not happy with the rate at which Akay buys their crops, and the frequency with which it procures farm output from farmers. However, since farmers in Karnataka responded to the same question with overwhelming satisfaction with their current state, the disparity in satisfaction levels between Andhra and Karnataka could be a function of the time of engagement with Akay in the two locations. Andhra farmers have only been farming under Akay's contract for an average of 1 year, while their Karnataka counterparts have done so for average of 10. Many of the benefits of contract terms may require a medium-term gestation period, such as contract pricing averaging out to be higher than market prices over a long-term period. Nevertheless, it would be useful for Akay to review its contract terms and pricing model in consultation with Andhra farmers to identify the point of disaffection and resolve it successfully.

Our time-effects hypothesis was supported by Akay's assessment of its performance in Andhra Pradesh. In response to our queries, Akay said "The association with farmers in Andhra Pradesh has been a recent one for Akay. We have started contract farming with the farmers in Andhra Pradesh basically to support our new project. i.e sterilized whole/ground spices ( under new group company Akay Spices Pvt Ltd.). It has been only around 6 months' association with these farmers in Andhra Pradesh. Short length of association with them is the major reason for limited impact at this point. However, in the coming years, we hope to improve the relationship with them through measures which can have positive impact both Akay and farmers in a mutually beneficial way."

## **3. Communication strategy**

Effective communication with its farmers should be a key strategy for Akay to ensure success over the long-term. At the time of the survey, 99% of prospective contract farmers in Cambodia were not aware of any training programs for themselves and their spouses, 96% didn't think they would get better prices from Akay compared to the present, and only 14% believed their incomes would have any increase after contract farming for Akay. While survey results in India and Akay's own plans

reveal positive impacts on the aforementioned indicators, the prospective farmers in Samlot have not been communicated the same effectively. Akay could benefit from having a dedicated farmer outreach team that liaises directly with the farmers to speak about company plans likely to affect them, upcoming training sessions, timelines of infrastructure work, and collects feedback from farmers on its training sessions, on pressing needs of the community and to gauge their satisfaction levels annually or bi-annually. Increasing the information symmetry between Akay workers, employees and farmers, giving them access to information and making them active stakeholders in social-impact plans, are all likely to improve their satisfaction with Akay.

Akay was receptive to the recommendations laid out in this report. Akay welcomed the recommendations on annual measures for monitoring impact. Akay strongly supported the business model recommendations for social impact maximization, and affirmed its commitment to implement communication strategy measures to improve communication with the farmers, make them active stakeholders in social impact plans, and have a direct impact on their living standards.



## GENDER IMPACT ASSESSMENT



## 8: CONTEXT

Eliminating gender disparity and empowering women is a fundamental step towards holistic development of underprivileged communities, and has been codified as one of the 8 Millennium Development Goals by the UN<sup>58</sup>. In Cambodia and India, as in other low-mid income countries, rural women are concentrated in low-wage, low-skill and low-income sectors where they receive less wages than their male counterparts<sup>59</sup>. In South and East Asia, women often do not have equal access to education, paid employment and property rights, and reproductive health services can be extremely scarce. In Cambodia, many women have had to shoulder the responsibility of heading their households after losing male members in violent conflicts.<sup>60</sup> As a result, living standards of women are often worse than the average poor person: a problem that is compounded by inadequate distribution of women-specific infrastructure such as reproductive health services, maternity centers and water and sanitation facilities.

Akay's expansion plans in Kerala, India and Battambang, Cambodia seek to impact women with the expected outcome of improving their poverty and living situation. We can assess the expected impact of Akay's activities on women in four ways:

- i) Ex-post analysis of Akay's activities using survey data from Andhra Pradesh and Karnataka
- ii) Calculating baseline conditions of women around Akay's model farm in Samlot district, Battambang
- iii) Analyzing Akay's expansion to understand planned instruments of gender impact
- iv) Identifying places of high-impact potential on the basis of survey results

This analysis attempts to show the links between Akay's contract farming model and related activities, and the change in socioeconomic, employment and living conditions of women. In India, survey results of 180 Akay male farmers and 51 wives of these chilly farmers have been used to demonstrate intervention effects. In Cambodia, survey results of 83 prospective women farmers in Asothe, Samlot District, Cambodia, have been used to create a baseline of women's socioeconomic status, which has then been applied to identify current conditions and opportunities for high gender impact. Finally, we review ex-post impact results, ex-ante potential impact, and areas of impact gaps, to propose improvements in the gender-impact of Akay's expansion activities in India and Cambodia.

---

<sup>58</sup> UN MDG Factsheet: [http://www.un.org/millenniumgoals/pdf/Goal\\_3\\_fs.pdf](http://www.un.org/millenniumgoals/pdf/Goal_3_fs.pdf): accessed 05/30/2014.

<sup>59</sup> Page 25, JICA Cambodia

<sup>60</sup> IFAD, Operations: <http://www.ifad.org/operations/projects/regions/pi/factsheets/kh.pdf>: accessed 05/30/2014

## 9: OBSERVED GENDER IMPACT IN INDIA

For the purpose of this study, in addition to the survey of 180 male chilly farmers, a sample of 51 women (26 in Andhra Pradesh, 25 in Karnataka)<sup>61</sup> to gauge the condition of women on important socioeconomic indicators. These women were surveyed independently from men and their households to provide them with an environment where they could respond without being influenced by dominant members of their household. At the same time, our survey of male chilly farmers had a number of questions to assess gender impact from their point of view too. Overall, 86% (155) of 180 men surveyed had wives working on an Akay contract farm. The two sets of responses should provide a good indicator of the overall conditions of women under contract and/or employ of Akay in India.

Tables 13 & 14 show results under key indicators of financial access, inclusion and equality from the women specific survey:

*Table 13. Women's performance on key financial empowerment indicators N=51*

Variable	Unit	Andhra Pradesh	Karnataka	Combined Average
Women who have control over own earnings	% Yes	34.6	40	37.25
Bank account in women respondent's name	% Yes	80.8	4	43.14
Income Stability	% Very stable-somewhat stable	30.8	76	52.94

*Table 14. Akay's impact on key work and income indicators for women N=51*

Variable	Unit	Andhra Pradesh	Karnataka	Combined Average
Improvement in working conditions since working with Akay	% Yes	7.7	84	45.10
Increased control over earnings since working with Akay	% Yes	3.84	80	41.18
Has Akay provided training	% Yes	3.8	56	29.41

Akay's project impact on women can be assessed under changes to income, financial inclusion, decision-making power, and employment resulting from association with Akay. The survey analysis reveals strong patterns in the Karnataka and Andhra Pradesh samples. Overall, women in Karnataka outperformed their counterparts from Andhra on almost all key employment and finance indicators. One exception was the ownership of bank accounts in the women respondent's name, where only

<sup>61</sup> The relatively small sample size of 51 women makes it difficult to extrapolate their outcomes to the women population under Akay as a whole. However, their responses are still indicative of the general conditions witnessed by women in Karnataka and Andhra Pradesh under Akay contracts, and can be used to draw reasonable conclusions about gender impacts in the two states.

4% of women in Karnataka, versus 80% in Andhra said they had one in their name. Such a large disparity cannot be sufficiently explained by survey data, but could be due to major differences in government policy and access to banks in the two regions surveyed. Outliers such as this make it difficult to draw causal links between Akay's activities and general quality of life indicators, but the results from this analysis help conceive a general understanding of Akay's impact on women under its employ or contract.

i) **Financial Inclusion and control:**

Figure 15. Stability of women's income N=51

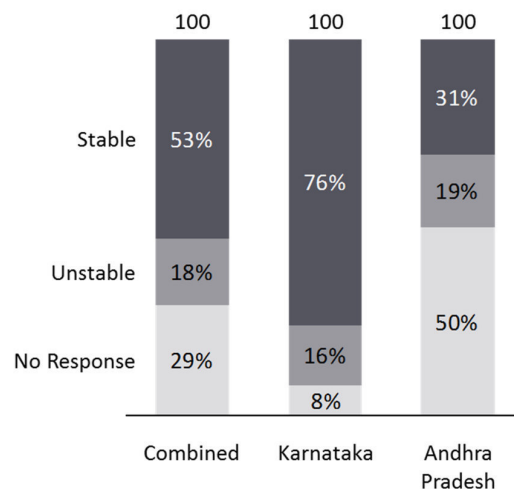


Figure 15 shows the reported stability of income of women respondents in Karnataka and Andhra Pradesh. Overall, 53% of the total sample of 51 women reported having stable incomes, 18% reported unstable incomes, and 29% did not respond to the question. 76% of women in Karnataka reported having stable incomes (ranging from very stable to somewhat stable), whereas only 31% reported the same in Andhra Pradesh. 50% of women in Andhra Pradesh gave no response to the question at all, suggesting lack of basic information or awareness about personal or household incomes. Additionally, it is possible that this question did not conform to local social norms, where women may reserve their response on personal financial information to private spaces.

This data suggests that a large majority of women in Karnataka under Akay's contract, receive stable incomes from the company which can help pay routine bills and structure finances to better meet the needs of their households. For example, case studies have shown that stable incomes for men and women help parents commit to essential needs of their children, predominantly their education and nutrition<sup>62</sup>. Since school fees require regular payments, and improvements in nutrition require stable incomes to be able to allocate money to purchase more nutritious food, stable incomes for women in Karnataka can be expected to translate into gains for the household and children.

<sup>62</sup> In a 2013 study on impacts of BoP venture Villa Andina, researchers found significant positive impacts on the education, health and capability (education) indicators of children of farmers receiving stable incomes. Source: "Improved income stability, training, market facilitation and their impact on children: an exploration of Villa Andina," William Davidson Institute, University of Michigan, <http://wdi.umich.edu/research/bop/projects/field-based-projects/Child%20Impact%20Case%20Study%205%20-%20Improved%20Income%20Stability%20-%20Training%20-%20Villa%20Andina.pdf>; accessed on 23<sup>rd</sup> June 2014.

Figure 16. Bank account in women  
respondent's name N=51

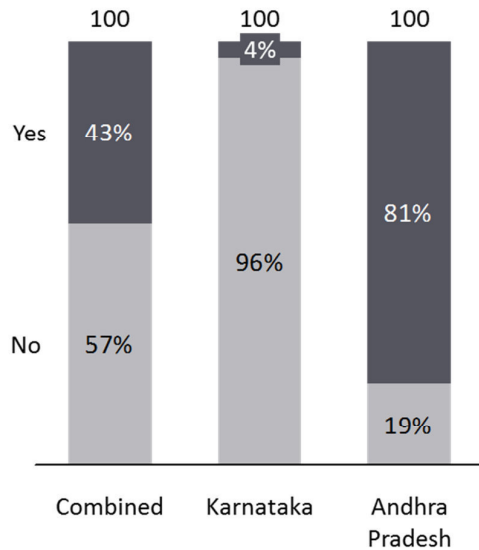


Figure 17. Bank Account in wife's name<sup>63</sup> N=180

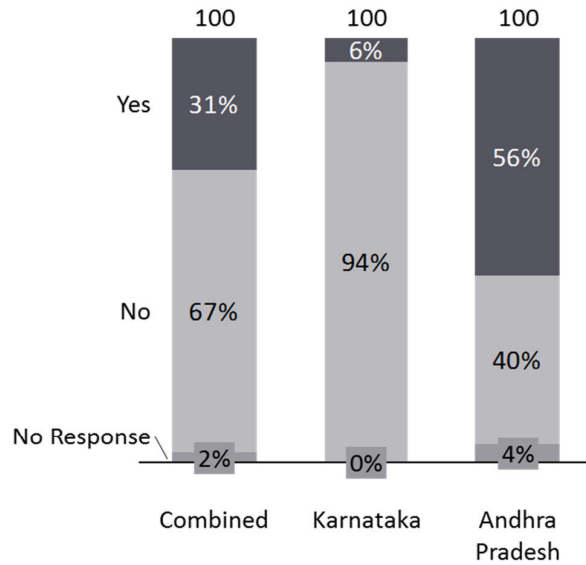
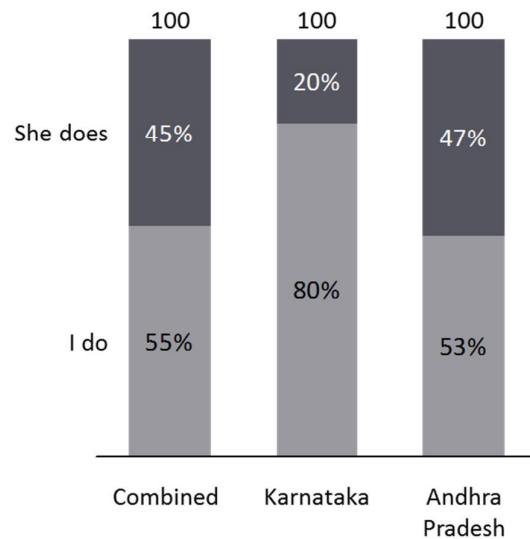


Figure 18. Who controls wife's bank account?<sup>64</sup> N=56 (Total N=180)<sup>65</sup>



<sup>63</sup> From India Male Chilly Farmer Survey

<sup>64</sup> From India Male Chilly Farmer Survey

<sup>65</sup> Out of 180 male chilly farmers, only 56 who had wives with bank accounts responded to this question



Figure 19. Women respondents who have control over own earnings N=51

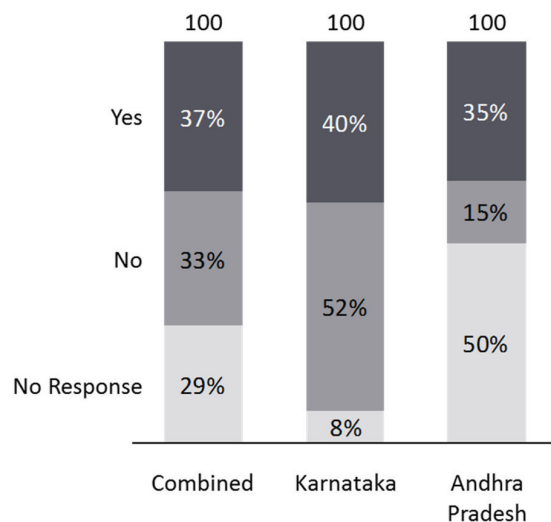
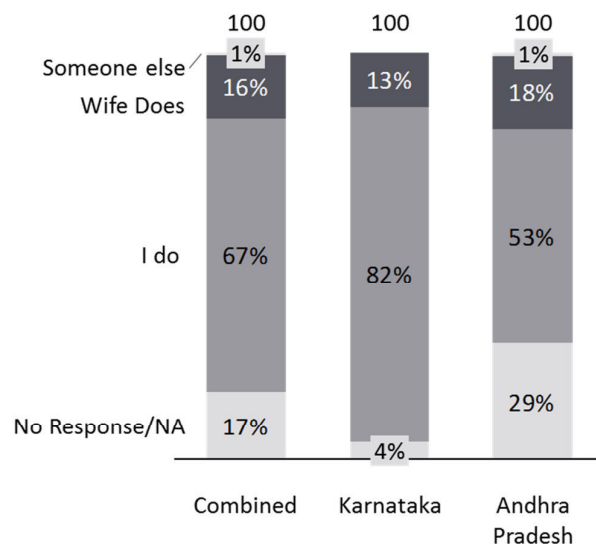


Figure 20. Who has control over wife's earnings?<sup>66</sup> N=180



Figures 16-20 reveal important financial inclusion and control information. Figure 16 shows a wide gap between women bank account holders in Andhra Pradesh and Karnataka, as highlighted earlier. Only 4% of the 25 women in Karnataka had a bank account in their own name, versus 81% who had the same in the Andhra Pradesh. 6% of men in Karnataka said their wives had a bank account in their name, compared to 56% in Andhra Pradesh. This suggests an inadequacy of banking services outreach for women in Karnataka. Alternatively, the limitations on holding bank accounts could be influenced by social and gender norms in Karnataka that prefer husbands, fathers or sons to hold the bank account on behalf of the woman. The social norm theory is supported by the fact that 80% of men with wives who had bank accounts in Karnataka said they had control over the account, versus 53% in Andhra Pradesh. Differences in social norms could also help explain the contrasting data represented in figure 5-6, where 40% of women in Karnataka reported having control over their earnings, but only 13% of men said the same about their wives. Similarly 35% of women in Andhra Pradesh said they controlled their own earnings, compared to 18% of men who said the same about their wives. A sizeable 50% of women respondents in Andhra Pradesh did not respond to the question of having control over their earnings, indicating lack of information and agency amongst the women there.

Access to banking is a key step in the financial inclusion of women in the formal economy, and a method to shore up household finances by giving women power over expenditure allocation. Having control over a bank account could lead to greater agency than keeping cash money, which can be easily coerced off the woman by male dominant members, and spent quicker due to physical convenience. Bank accounts encourage savings for long-term growth of incremental income, and are

<sup>66</sup> From India Male Chilly Farmer Survey

particularly useful for women deciding to start small-scale businesses on the side.<sup>67</sup> According to the World Bank's 2014 "Global Financial Development Report," financial inclusion is essential in fighting poverty as "there are several crucial benefits to having a bank account, such as: facilitating the saving process; facilitating the receiving of government payments; and enabling entrepreneurship through the building of credit."<sup>68</sup>

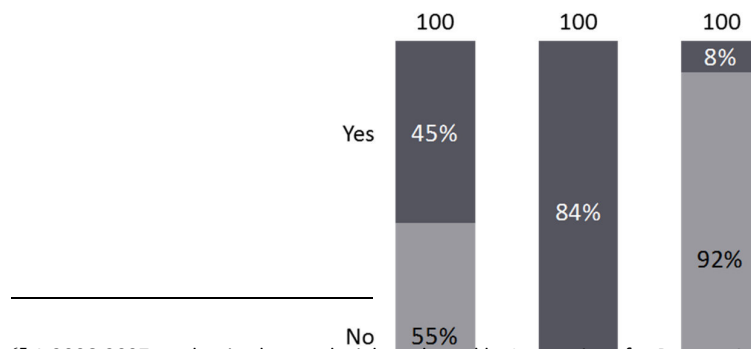
The interesting takeaway from this data is that despite only 4% of women respondents in Karnataka holding a bank account in their names, 40% said they had control over their own earnings. This percentage is halved when men were asked to report the same about their wives. This could have three potential implications:

- i) The larger sample of 180 male farmers better represents the actual situation of financial inclusion and control of women, compared to the smaller sample of 50 women
- ii) There is a mismatch of understanding over financial control between husbands and their wives, where wives are given symbolic control of their account even though actual control rests with the husband
- iii) Women in Karnataka choose alternative methods of financial management to the formalized system because of a variety of social, economic and state-related reasons.

Informal arrangements of cash savings in personal deposit boxes, reliance on informal bankers, and lack of knowledge on the benefits of banking may also contribute to the outcomes we have seen. These areas can be useful targets of awareness, support and capacity-building strategies for Akay.

## ii) Employment and empowerment:

Figure 21. Improvements in work conditions under contract-farming for Akay N=51



<sup>67</sup> A 2006-2007 randomized control trial conducted by Innovations for Poverty Action (IPA) found that opening and using formal savings accounts encouraged the treatment group to save more, increase daily investment in small-scale businesses, which resulted in higher profits and higher total expenditure of respondents. Each of these effects were stronger in women than in men. For example, daily private expenditures of women in treatment group increased by 37% compared to the control group. This is one demonstration of the strong multiplier effects of formal savings account usage by women in rural areas. Source: "Savings Accounts for Rural Micro Entrepreneurs in Kenya," IPA, 2006-2007; <http://www.poverty-action.org/project/0088>; accessed on 25<sup>th</sup> June 2014.

<sup>68</sup> Here, the review of development theory on financial inclusion serves as a good guide to explain the importance of financial inclusion in Akay's project: "Available models illustrate how financial exclusion and, in particular, lack of access to finance can lead to poverty traps and inequality (Aghion and Bolton 1997; Banerjee and Newman 1993; Galor and Zeira 1993). For example, in the model of Galor and Zeira (1993), it is because of financial market frictions that poor people cannot invest in their education, despite their high marginal productivity of investment. In Banerjee and Newman's model (1993), the occupational choices of individuals (between becoming entrepreneurs or remaining wage earners) are limited by the initial endowments. These occupational choices determine how much the individuals can save and what risks they can bear, with long-run implications for growth and income distribution. These models show that lack of access to finance can be critical for generating persistent income inequality or poverty traps, as well as lower growth." "Global Financial Development Report," The World Bank Group;

<https://openknowledge.worldbank.org/bitstream/handle/10986/16238/9780821399859.pdf?sequence=4>;

Figure 22. Increase in control over earnings since contract farming with Akay N=51

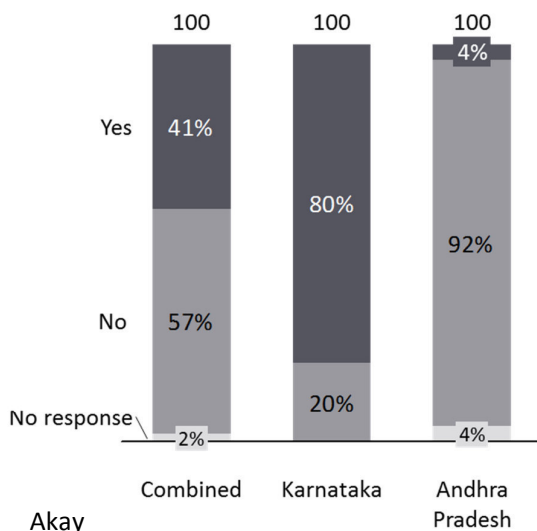
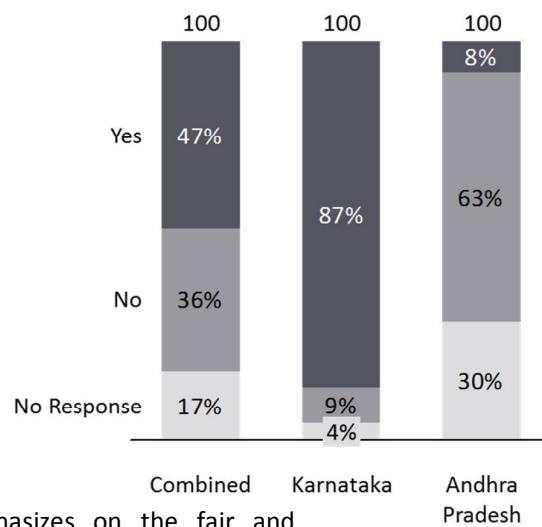


Figure 23. Has working with Akay improved wife's control over earnings?<sup>69</sup> N=180



Akay emphasizes on the fair and reasonable working conditions at its contract farms in India and Cambodia. In Figure 21, this emphasis is verified by Karnataka results, where 84% of the women who have been associated with Akay for an average of 10 years (versus 1 year in Andhra) reported improvements in their work conditions after contract-farming for Akay. Andhra Pradesh presents reverse outcomes: 92% of women here reported seeing no improvements in working conditions since contract farming for Akay. This vast disparity could be explained, in part, by the difference in average length of association with Akay in the two states, which could affect the delivery of tangible benefits in the time limit imposed by the survey date. Additionally, it could be possible that the implementation of improvements in physical work processes has not been adequately implemented in Andhra Pradesh contract farms, which could be a region of strategic evaluation for Akay.

Figure 22-23 gives a similar picture of impact in the two states. While 80% of women respondents in Karnataka, and 87% of men (on behalf of their wife's), felt an increase in control over their earnings since working for Akay, only 4% of women in Andhra Pradesh, and 8% of men on behalf of their wives, reported feeling the same effect. The reasons for this disparity could be similar to the previous indicators: the time of engagement could be a constraint on the delivery of benefits to medium-term engagements in Andhra Pradesh. Additionally, the actual impact on women's financial behavior and work conditions could be minimal in Andhra Pradesh, and requires additional scrutiny by Akay's management and ground staff.

<sup>69</sup> From India Male Chilly Farmer Survey

Figure 24. Distribution of labor among different farm activities N=180  
% Women engaged

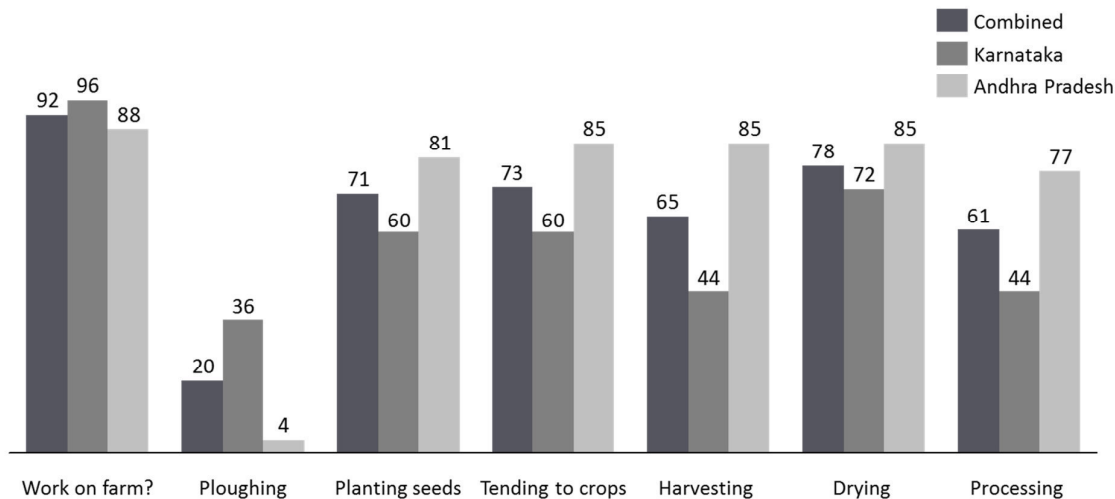


Figure 24 illustrates the percentage wise distribution of women among different activities on the farm. Overall, 92% of women sampled worked directly on the farm. Women in Andhra Pradesh have a higher work burden due to the wide range of activities done by over 80% of all women surveyed. Women in Karnataka have more specialized tasks, and only planting seeds and tending to crops is done by more than 50% of the women. Overall, the highest percentage of women reported doing drying (78%) and tending to crops (73%) tasks, while ploughing was done by the smallest number of women (20%). This tells us that when investing in technological improvements and time-saving implement upgrades, Akay can target investments relating to drying and crop tending activities to deliver maximum benefit to the largest possible population of women contract-farmers.

Currently, Akay has implemented the following technological improvements to reduce the work/time burden of farmer women:

- Akay has been promoting the use of natural pheromone traps in their farms, by which women can prevent pest attacks on the farms
- Akay has been promoting the use of polythene sheets for the purpose of drying, so that women don't have to dry material in the mud. By this, contamination with mud, soil etc. can be avoided, which reduces time burden on women.
- Farmers are not required to carry their output to our factory. Instead, Akay collects the produce directly from their farms using our own vehicles. This greatly reduces the physical and time burden on women carrying heavy farm produce to farms, and allows them to allocate time elsewhere.
- Akay supplies collection bags, free of cost, so farmers don't have to spend their disposable incomes doing so.

### iii) Income

Table 15. Women's average monthly income compared to national average and international poverty lines (USD)

	Karnataka Survey results	Karnataka State average per capita/month income <sup>70</sup> (2010-2011) <sup>71</sup>	Andhra Pradesh survey results	Andhra State average per capita/month income (2010-2011)	Monthly International Extreme Poverty line <sup>72</sup> (USD1.25 X 30)
Monthly Income, INR (USD <sup>73</sup> )	6021.74 (100.36)	4980.25 (83.00)	2769.23 (46.15)	5038.17 (83.97)	2250 (37.5)

Table 15 gives us a comparison of women's monthly income as reported in the survey, compared to state averages (2010-2011).<sup>74</sup> Women in Karnataka, on average, earn ~USD100 per month, compared to the state average per capita income of ~USD83, which means that under contract farming for Akay, women sampled in Karnataka earn ~USD17 more per month, or ~USD204 more per year, than their average state counterparts.

The results from Karnataka are encouraging because women report receiving a higher monthly income than state per capita income averages, which uses a sample of men and women. Since men comprise a larger part of the formal economy (and thus the sample of income earners), our data suggests women contract farmers for Akay receive comparable or higher monthly incomes than the average man, statewide. In Andhra Pradesh, women sampled reported earning ~USD46 per month, against the state average per capita monthly income of ~USD84. This means that women under contract farming arrangements with Akay in Andhra earn ~USD38 less than the average state per capita income. This result is confirmed by survey respondents in Andhra Pradesh, where 85% of women surveyed said they saw no change in incomes since working with Akay, whereas 88% of women in Karnataka reported small increases in their income under Akay.

Women in both states are, however, above the international extreme poverty line of USD1.25/day or USD37.5/month, though women in Andhra earn only ~USD9 above this poverty line, per month. The disparity of USD54.21/month between the incomes of Karnataka and Andhra Pradesh women respondents support the patterns in financial indicators discussed above, and presents a point that requires significant attention and review from Akay. Income parity between contract-farmers from

<sup>70</sup> Indian Ministry for Statistics and Program Implementation Press Release: <http://pib.nic.in/newsite/erelease.aspx?relid=73929>:

<sup>71</sup> Annual Per capita income/12

<sup>72</sup> World Bank International Poverty line for extreme poverty

<sup>73</sup> 1 USD: 60 INR

<sup>74</sup> This data is 3 years old, and thus is likely to have changed. It is probable that the average state per capita incomes have risen by 10-20% since then.

different states, and ensuring women earn incomes at least comparable to state averages, should receive focus from Akay in future plans.

## 10: POTENTIAL FOR GENDER IMPACT IN CAMBODIA

Table 16. Cambodia baseline results for income and finance indicators N=83

Variable	Unit	Value
Women respondents who are primary income earners for household	%	62.65
Women who have a bank account	% Yes	0
Women who have control over family expenses (alone, or jointly with husband)	%	98.80

Out of the 194 prospective contract farmers surveyed in Prey Thom Village, Battambang, Cambodia, 83 (42.8%) were women. Of these, ~63% were primary income earners for their households, which means that any potential gender impact on them would have a direct impact on the condition of their households. For example, for every one woman of the 52 primary earners impacted, another ~5 people (average household size in survey) in her home would feel effects of employment, income and social infrastructure changes. Thus in addition to the 52 primary income earners surveyed, 247<sup>75</sup> other men, women and children could be positively impacted by Akay's gender-specific activities. Even though ~99% of women prospective farmers reported having individual or joint control over family expenses, none had a bank account in their name. This reveals access to banking services to be one of the major areas requiring attention in Akay's gender impact plans.

Figure 25. Comparison of women's and men's uses of incremental income N=194 (Multiple responses by 194 farmers: responses not mutually exclusive)

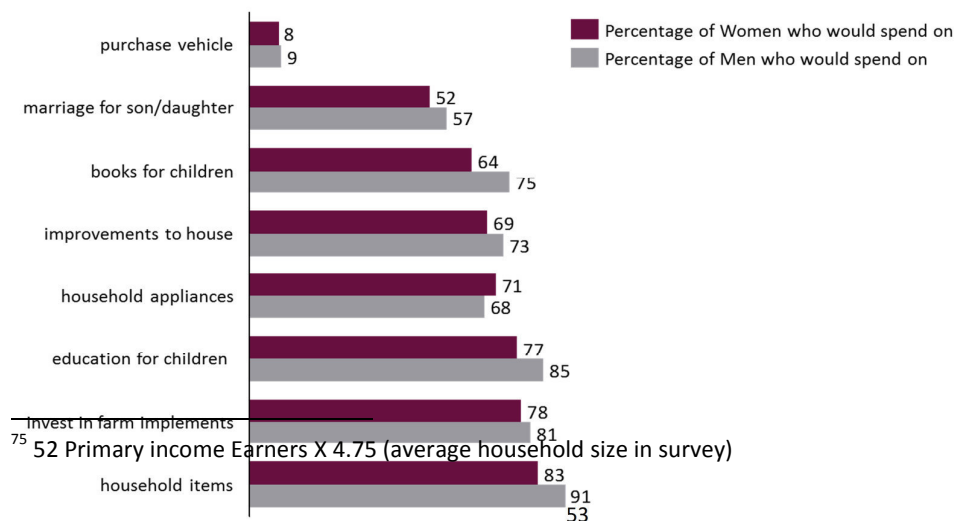


Figure 26. Control over household expenses<sup>76</sup> N=83

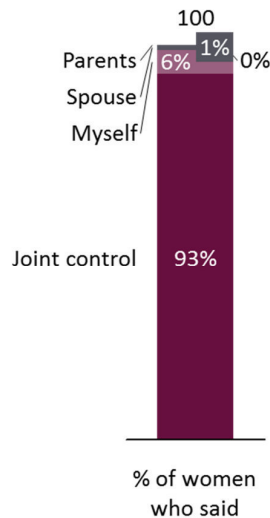
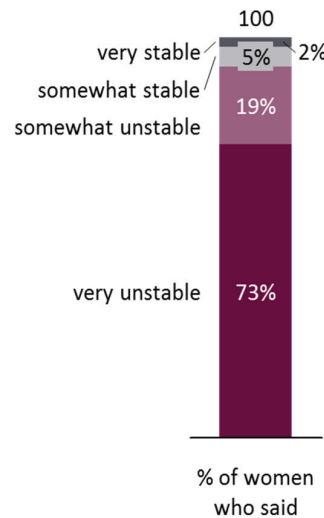


Figure 27. Women's income stability N=83



Figures 25-27 shed light on the condition of women prospective farmers under consumption behavior and income and expense variables. Figure 25 compares the expected expenditure patterns of men and women prospective farmers were they to receive an increment in their income from Akay. Both genders have identical consumption preferences, with household items (groceries and food), farm implements and education for children being the three most popular categories of expected expenditure. More than 70% of all men and women surveyed would spend their incremental income on these categories. The high rates of affirmative responses (more than 50%) to all options barring purchase of vehicle, indicates the high potential impact of incremental income on the lives of women and their households.

The expenditure pattern also demonstrates the potential for multiplying Akay's impact on women among the community: by assisting them in the efficient allocation of additional resources on buying more nutritious food for the household, investing in upgrades to farm inputs, educating their children, and improving the physical infrastructure and facilities of individual homes. The alignment of expenditure preferences between men and women is supported by 93% of women respondents who reported having joint control over expenses with their partners. Lastly, 73% of women, and an equal number of men, reported having very unstable incomes, which is an area with positive results in Karnataka, India (76% of women respondents reported having stable incomes there). Thus, Akay can demonstrably cause improvement in the stability of incomes of women farmers in Cambodia, and help them use financial parity at home to distribute gains of incremental incomes beneficially.

<sup>76</sup> As reported by women respondents among Cambodia prospective farmers

## 11: STRATEGIC INTERVENTIONS IN INDIA AND CAMBODIA

Akay reports that more than 70% (280) of their farm staff of 400, including the 200 seasonal staff at Asothe, Cambodia, are women<sup>77</sup>, and our survey revealed that 83 of the 194 (43%) prospective farmers around their Asothe model farmers were women too. Inclusion in Akay's farming and farm-support activities gives women the chance to participate in productive economic activity and take fair wages home to support their household expenses. Since women are usually in charge independently or jointly with spouses (94% of prospective farmer respondents in Cambodia reported to have joint control over family expenses<sup>78</sup>), of household affairs and expenses, empowering them economically has been known to translate to direct gains in education for children, reproductive health and nutrition for the family<sup>79</sup>.

In addition to direct economic engagement, Akay has created a self-sufficient community in Tadas, North Karnataka led by empowered women, built schools for their children and improved local infrastructure used by both men and women.<sup>80</sup> Here, for example, Akay introduced the practice of paying women weekly, on every Saturday<sup>81</sup>, so they could directly procure household items at the end of the work-week, not depend on their spouses to allocate funds for purchases, and resist the pressure of allocating their income to their husband over the household.

At Akay's model farm in Asothe, Cambodia, the company provides all staff free housing: independent female staff workers receive separate quarters from men (ensuring safety and privacy), and women as part of a household receive housing with their family. Finally, Akay provides child-care facilities at the model farms so women can be productively engaged while a dedicated caretaker takes care of their young children. These initiatives make a better work environment for working, young-mothers and reduce the opportunity cost of their employment on their households. Finally, including women into the fold of productive activities and linking them with the local farmer network can have multiplier effects in terms of confidence building, social and political participation at the local level, and exchange of information and ideas with gender parity<sup>82</sup>.

---

<sup>77</sup> Page 2, Akay Cambodia Social Development efforts PDF.

<sup>78</sup> Question 58, "who has control over family expenses?" Cambodia Prospective contract farmers

<sup>79</sup> IFPRI: <http://www.ifpri.org/sites/default/files/publications/ifpridp01294.pdf>

<sup>80</sup> Page 3, Akay Cambodia Social Development efforts PDF

<sup>81</sup> Page 31, Project report on expansion plans of Akay group in Cambodia

<sup>82</sup> "Women's employment, empowerment, and globalization: an economic perspective," Elissa Braunstein, 2008: <http://www.un.org/womenwatch/daw/ws2009/documents/EC-WSRWD-2008-EP3%20Braunstein%2026Feb09.pdf>

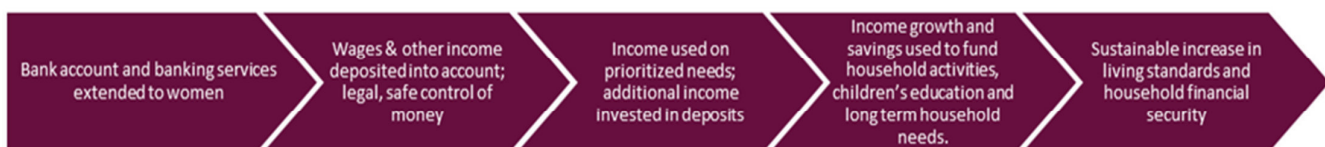


## 12: AREAS OF HIGH POTENTIAL GENDER-IMPACT

By compiling the results of our surveys, and analyzing Akay's own expansion plans in India and Cambodia, the categorical impacts of Akay's activities on women are visible. The project plan guarantees that a sizeable number of women will be directly extended economic opportunities of fair-wage labor, receive incremental income based on Akay's premium pricing and wage rates, and access to basic infrastructure such as roads, water, health services and markets. However, as evidence from Andhra Pradesh and Cambodia illustrates, in issues that are heavily influenced by local social and cultural norms, as well as prevailing state and administrative conditions, there is vast scope for improvement. Social benefits, beyond better income and work conditions, have not been reported by survey respondents in Karnataka and Andhra Pradesh. The main delivery mechanism of social benefits – community infrastructure - has not seen improvements under Akay, barring the maintenance of roads. The reason behind the absence of service delivery could be that Akay has not invested in public infrastructure (rather only invested in captive infrastructure relating to its own activities), or because the specific villages surveyed were yet to see infrastructure interventions. It's recommended that Akay focus on the following activities to improve its gender impact in communities of its contract-farmers:

- i) **Banking and finance:** Women, by and large, do not have a bank account in their name in all areas surveyed. Akay can have a dedicated financial inclusion strategy where it provides information, training and awareness on basic banking practices to women, and monitors the reach of banking services to women under its employ. Akay can implement its end-of-week payment system for women across contract-farmers in India and Cambodia.
- ii) **Training and information dispersal:** None of the 83 women respondents in Cambodia were aware of training provided by Akay, and only ~9% of respondents in India said their wives received any form of training from Akay. Akay should ensure the delivery of its training session to women, and coordinate with them over the best timings and methods to disseminate training materials.
- iii) **Reproductive health services and social infrastructure:** In India, there was no reported improvement in water, health services and education for children from the time of contract farming with Akay. Akay should build a maternity clinic at its model farm for the large women population engaged there. The team should ensure women have access reproductive and other health services, have potable water within their households or communities, and can send their children to school without difficulty.

Figure 28. Potential impact of extending banking services to women



These interventions are likely to add significant tangible monetary and non-monetary benefits to the lives of women, and through them, to their household members. The cost and time savings related with provision of aforementioned basic services can be translated into gains for the family and

children by the working mother. Most importantly, improvements in these sectors can contribute to the expansion of women's agency in rural areas, which can lead to greater empowerment and control over outcomes in areas of need for women. It is important to be mindful of cultural and social context within which each community is placed, so Akay can help overcome the barriers informally placed upon women in their specific contexts<sup>83</sup>. For example, it may be beneficial to hold special gender-specific information and training sessions for women, instead of gender-mixed groups, to accommodate the needs of women and to ensure delivery of information to them with lessened obstruction from more dominant men. It would be best, therefore, that women were made active stakeholders in the design and implementation of the contract-farm expansion in Cambodia, and the setting up of processing plants in Kerala: their views, ideas and needs be noted, accounted for and integrated into the project plans of Akay for long-term sustainability.

---

<sup>83</sup> Here, the insights shared by the World Bank study, *Rural Women in the Sahel and their Access to Agricultural Extension*, 1995, can be very useful: "Women have less time than men, and certain periods of day are dedicated to specific activities. Extension activities must match the time and place specified by women.: A priority of extension services should be facilitating women's access to labor-saving technology: Male extension workers should be taught how to approach women producers in a culturally acceptable manner: The number and status of female extension staff should be increased":<sup>83</sup>: accessed on 06/01/2014

## GENDER ACTION PLAN

Outcome/Outputs	Actions and Indicators (with proposed timelines)	Overall timeline	Responsibility and Time Frame
Expansion of contract-farming in Battambang, Cambodia	<ul style="list-style-type: none"> <li>Women will comprise 70% of farm staff (2015)</li> <li>About ~50% of all new contract farmers in Samlot, Battambang, Cambodia will be women (2015)</li> <li>Benefits of contract-farming extended equally to women; fixed prices, Akay premium on market price, increase in household incomes (Contract-farmer baseline HI<sup>84</sup> India; USD142, Cambodia; USD167) (2015)</li> <li>Women farmers to have equal access to drip-water irrigation system, energy supply, wind mills and other farm technology set up by Akay (2015)</li> </ul>	2015	Akay Cambodia Team
Expansion of contract procurement in India	<ul style="list-style-type: none"> <li>Expansion of contract-farming to women farmers (55% of all contract-farmers will be women) (2015)</li> <li>Hiring and training workers to operate Kerala spice processing facilities (30% women)</li> <li>Advertising and extending available employment opportunities to appropriately qualified women (Please advise approximate % or number of women who will be employed in new plants and facilities) (2015)</li> <li>Training women on operation of machinery and processes in extraction plants (Please advise what % or number of women will be/can be given training) (2015-2018)</li> <li>Payment of fixed, fair and gender-equal wages to women for work performed in plants (2015)</li> </ul>	2015	Akay Kerala Team
Building women-empowered communities around contract farms in India and Cambodia	<p>A. Facilities for Women</p> <ul style="list-style-type: none"> <li>Creation of women-run community in Tadas, Karnataka (complete)</li> <li>School built for children in Tadas to reduce distance and cost burden of children's essential education needs (complete)</li> <li>Establish child-care center for working mothers at Cambodia model farm. Design of center to be consulted with women. (2015-2016)</li> <li>Reserved free housing facilities for women farm workers in Cambodia. Design of house to be in consultation with women. (150 women</li> </ul>	2015-2018	Akay Cambodia Team, local government agencies, gender-related NGO's

<sup>84</sup> Household Income. Source; India Male Chilly Farmer Survey, and Cambodia Prospective Farmer Survey

	<p>farm workers currently housed, 30-50 women additional housed during high season) (current and 2015)</p> <ul style="list-style-type: none"> <li>• Provide reproductive health and family planning services, in coordination with government health agencies to improve access to health and health information facilities (50% women contract farmers and 70% women farm workers) (2015-2016)</li> <li>• Active consultation with women on tailoring work schedules to accommodate women's household and maternity needs. (2015)</li> <li>• Active stakeholder consultation with women on specific social infrastructure facilities; location and capacities of schools, health care facilities, reproductive health services (2015)</li> <li>• Advertise and extend participation opportunities for collective infrastructure development to women; planning and building of social infrastructure, designing homes and water and sanitation facilities; building and running community centers; use local available labor (50% women) for construction activities. (2016)</li> <li>• Appoint staff and volunteers from NGO's to conduct gender awareness and information programs in community (2016)</li> </ul>		
Technical and process training in Cambodia	<ul style="list-style-type: none"> <li>• Women contract farmers (50% of total farmers) given equal opportunity to attend training sessions on (i) organic farming, (ii) best use of farm implements and (iii) farm machinery (2015)</li> <li>• Workers to be trained and employed at Kerala processing plant facilities (30% will be women)</li> <li>• Women informed about future training sessions and given equal opportunity to attend and participate as men (2015)</li> <li>• Spread relevant and up-to-date information equally to 50% women farmers on farming best-practices, farm inputs and market conditions on a regular (weekly or fortnightly) basis. (monthly)</li> <li>• Consult women on best times for training sessions according to their collective needs (monthly)</li> <li>• Conduct of quarterly meetings with women farmers to disseminate new agricultural information and upcoming agricultural trainings and consult on other concerns. (every quarter, 2015-future)</li> </ul>	2015	Akay Cambodia Team
Creation of women networks and capacity building	<ul style="list-style-type: none"> <li>• Establish women groups each in India and Cambodia (2015-2018)</li> <li>• Assist in engaging women groups in productive activities such as labor for project work, small business activities, and using underutilized</li> </ul>	2016	Akay ground and gender team and staff, credit extension team

	<p>facilities (buildings, land and energy) for meetings, planning and entrepreneurship. (2016)</p> <ul style="list-style-type: none"> <li>Extend credit facilities for women farmers for aforementioned entrepreneurial and additional income generating activities (2017)</li> </ul>		
Financial Inclusion and management	<ul style="list-style-type: none"> <li>Help facilitate women get access to banks, open and operate a bank account (2016)</li> <li>Deposit income directly to women's accounts to increase their financial control (2015)</li> <li>Conduct training/orientation to women on financial management mechanisms, household expense budgeting, methods of saving and other opportunities for income generating activities (annually, 2015)</li> <li>Identifying and advertising opportunities of productive investment of savings; starting cooperatives, small scale businesses and investing in local infrastructure (2017)</li> <li>Conduct confidence-building and joint-problem solving workshops with gender-advocacy NGO's to assist women in overcoming social and cultural barriers to participation and expression of agency (2016)</li> </ul>	2015-2018	Akay Gender team, gender-advocacy NGO's, Local cooperative banks outreach team
Enhanced capacity of Akay to target and service women farmers	<ul style="list-style-type: none"> <li>Human resources allocated, nodal person/ gender specialist (one each in Cambodia and India) to support and guide implementation and monitoring of gender measures. (2015)</li> <li>Appoint staff and volunteers to conduct gender awareness and information programs in community (2015)</li> </ul>	2015	Akay Management
Improved monitoring and reporting on implementation of gender measures	<ul style="list-style-type: none"> <li>Sex-disaggregated database (on farmers and workers deployment, benefits and improvement to socioeconomic conditions), maintained and reported. (annually, 2015)</li> </ul>	2015	Akay Management

## REFERENCES

1. Akay Commercial and Technical RFP, January 2014
2. Akay Cambodia Social Development Efforts, 2013
3. Akay Outgrowers Model, 2014
4. "Akay Project report on expansion plans of Akay group in Cambodia," 2013
5. Akay India Male Chilly Farmer Survey
6. Akay India women's survey
7. Akay Battambang Prospective farmers survey
8. American Journal of Agricultural Economics, "Impacts of Technology and Structural Change on Agricultural Economy, Rural Communities, and the Environment," Lu, Yao-chi, 1985
9. "Cambodia Demographic and Health Survey," 2010;  
<http://www.moh.gov.kh/files/cdhs2010full.pdf>; accessed on 05/25/2014
10. Credit Suisse, "Assignment brief for cooperation with ADB on Market Study for Spices and poverty impact analysis in India and Cambodia," 2014
11. Cambodia Commune Database, "Cambodia Demographic and Health Survey," 2010  
(<http://db.ncdd.gov.kh/cdbonline/home/index.castle>); accessed on 05/20/2014
12. FAQ's, INDOCERT; <http://www.indocert.org/index.php/en/faq/organic-agriculture>; accessed on 05/29/2014
13. Food and Agriculture Organization (FAO), Gender Equity in Agriculture Guide;  
<ftp://ftp.fao.org/docrep/fao/012/i1240e/i1240e00.pdfv>; accessed on 05/25/2014
14. IFAD, Operations: <http://www.ifad.org/operations/projects/regions/pi/factsheets/kh.pdf>:  
[accessed 05/30/2014](#)
15. International Food Policy Research Institute (IFPRI), "Women's empowerment and Nutrition, An Evidence Review," Mara van den Bold, Agnes R. Quisumbing, Stuart Gillespie, 2013;  
<http://www.ifpri.org/sites/default/files/publications/ifpridp01294.pdf>; accessed on 05/29/2014
16. Indian Labor Bureau Report, 2013; [http://labourbureau.nic.in/WRRI\\_JAN13.pdf](http://labourbureau.nic.in/WRRI_JAN13.pdf); accessed 30<sup>th</sup> June 2014
17. Indian Ministry for Statistics and Program Implementation Press Release:  
<http://pib.nic.in/newsite/erelease.aspx?relid=73929>; accessed on 06/02/2014

18. Japan International Cooperation Agency, "Kingdom of Cambodia study for poverty profiles in the Asian Region," 2010
19. "Outgrower Schemes – Why Big Multinationals Link up with African Smallholders", Felgenhauer and Wolter
20. "Savings Accounts for Rural Micro Entrepreneurs in Kenya," IPA, 2006-2007;  
<http://www.poverty-action.org/project/0088>; accessed on 25<sup>th</sup> June 2014.
21. UNICEF Country Statistics, Cambodia;  
[http://www.unicef.org/infobycountry/cambodia\\_statistics.html](http://www.unicef.org/infobycountry/cambodia_statistics.html); accessed on 05/27/2014
22. UN MDG Factsheet: [http://www.un.org/millenniumgoals/pdf/Goal\\_3\\_fs.pdf](http://www.un.org/millenniumgoals/pdf/Goal_3_fs.pdf); accessed 05/30/2014.
23. Wage Indicator Foundation, "[Minimum Wage Compliance Report in Cambodia, Wage Indicator Report, August 2011](#)". Amsterdam, The Netherlands
24. William Davidson Institute, University of Michigan, "Improved income stability, training, market facilitation and their impact on children: an exploration of Villa Andina,"  
<http://wdi.umich.edu/research/bop/projects/field-based-projects/Child%20Impact%20Case%20Study%205%20-%20Improved%20Income%20Stability%20-%20Training%20-%20Villa%20Andina.pdf>; accessed on 23rd June 2014.
25. World Bank Global Poverty Indicators; <http://data.worldbank.org/topic/poverty>; accessed on 05/29/2014
26. World Bank Group, "Global Financial Development Report," 2014;  
<https://openknowledge.worldbank.org/bitstream/handle/10986/16238/9780821399859.pdf?sequence=4>; accessed on 24<sup>th</sup> June 2014
27. World Bank Group, "*Rural Women in the Sahel and their Access to Agricultural Extension*," 1995;  
<http://documents.worldbank.org/curated/en/1995/06/697292/rural-women-sahel-access-agricultural-extension-sector-study-overview-five-country-studies>; accessed on 24<sup>th</sup> June 2014
28. "Women's employment, empowerment, and globalization: an economic perspective," Elissa Braunstein, 2008; <http://www.un.org/womenwatch/daw/ws2009/documents/EC-WSRWD-2008-EP3%20Braunstein%2026Feb09.pdf>; accessed on 05/21/2014
29. World Bank, "*Rural Women in the Sahel and their Access to Agricultural Extension*," 1995,  
[http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/1995/06/01/000009265\\_3961019095155/Rendered/PDF/multi\\_page.pdf](http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/1995/06/01/000009265_3961019095155/Rendered/PDF/multi_page.pdf); accessed on 06/01/2014

## APPENDIX

<u>Variable</u>	<u>Unit</u>	<u>No of observations</u>	<u>Avera ge</u>	<u>Mini mum</u>	<u>Maxi mum</u>	<u>Rang e</u>	<u>Standard Deviation</u>
<b>Akay contract farmers in India (N=180)</b>							
Average chilly landholding in Andhra and Karnataka	acre	180	8.365	1	50	49	7.035389194
Average yield for Chilly	quintal/year	180	131.0889	5	900	895	112.6078522
Average yield/acre	quintal/acre/year	180	15.67112	5	18	13	
Average revenue/acre for chilly for Akay farmers	INR/acre/year	180	110297.5				
% change in average revenue/acre over control group	%	Andhra 178; Karnataka 180	10.57677				
Average monthly household income for Akay farmers	INR/house/month	180	8488.889	2500	19500	17000	
Average monthly household income for control group	INR/house/month	178	9272.472	2500	19500	17000	
Average before/after Akay household income change	%	180	50.3937				
Average change over control group	%	Andhra 178; Karnataka 180	17.95%				
Average Selling Price After Akay	INR	180	7038.268	950	1100	150	
Average Selling Price before Akay	INR	180	5139.444	3000	9000	6000	
<b>Cambodia Farm Workers (N=25)</b>							
Average Monthly Wage before Akay	KHR/month	25	347800	1,65,000	5,00,000	335000	
Average Monthly Wage after Akay	KHR/month	25	596000	3,00,000	9,00,000	600000	
<b>Cambodia permanent farm employees (N=26)</b>							
Average Monthly Wage before Akay	KHR/month	26	410000	65000	420000	4135000	
Average Monthly Wage after Akay	KHR/month	26	853846.2	300000	1300000	1000000	
<b>Cambodia prospective farmers (N=194)</b>							
Average household income/month	KHR/house/month	194	676368.4	65000	1300000	1235000	
Average household size	no. of persons	194	4.75	2	10	8	



Variable	Unit	Andhra Pradesh	Karnataka	Combined
<b>Women Survey (N=51)</b>				
Women who have control over own earnings	% Yes	34.6	40	37.25
Bank account in women respondent's name	% Yes	80.8	4	43.14
Income Stability	% Very stable-somewhat stable	30.8	76	52.94
Improvement in working conditions since working with Akay	% Yes	7.7	84	45.1
Increased control over earnings since working with Akay	% Yes	3.84	80	41.18
Has Akay provided training	% Yes	3.8	56	29.41
Women's average monthly income	INR	6021.73913	4395.48495	5208.612
<b>Male chilly farmer Survey (N=180)</b>				
Wives who have control over own earnings	% Wives who do	17.58241758	13.4831461	16%
Has working with Akay given wife more control over earnings	% Yes	7.692307692	86.5168539	47%
Bank account in wife's name	% Yes	56.04395604	5.61797753	31%
Who controls wife's bank account	% wives who do	47.05882353	20	45%
Has working with Akay improved access to a bank account for your wife	% Yes	0	0	0%
Did Akay provide wife training?	% Yes	16.48351648	2.2471910	9%
<b>Cambodia (N=194)</b>				
Women respondents who are primary income earners for household	%	62.65		
Women who have a bank account	% Yes	0		
Women who have control over family expenses (alone, or jointly with husband)	%	98.8		