

ASSESSING THE ADOPTION STATUS AND SOCIO-ECONOMIC IMPACT OF ROW SEEDER ON MALE AND FEMALE FARMERS: A CASE STUDY IN THOI LAI VILLAGE, CAN THO PROVINCE, SOUTH VIETNAM

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ABSTRACT

The important factor for adopting row seeder was the access of technological information from extension program. Farmers who applied row seeder have save seed cost, fertilizer and pesticide cost. Farmer understood situation of rice plants in row seeding leading to less nutrient competition and insect pest attack. Row seeding is labor saving technology; especially it reduced women labor in gap filling and hand weeding. Therefore, it increased leisure time for female family labor and improved their health. However, it caused lost jobs of poor and land less women who work as hired labors in gap filling and hand weeding. Thus, introduction of advance technology must be thought of its social negative impact to find the suitable solutions, especially to poor and landless women.

RATIONALE

Rice is the most important crop of the Mekong Delta farmers. The Mekong produces half (51%) of the total national rice production. Vietnam became a major exporter of rice due to increase in rice productivity and rice cropping intensity (Xuan and Matsui 1998). The increase in rice production was due to expansion of the irrigation scheme which is favorable for rice intensification of from single rice to double or triple cropping with high yielding and short-duration varieties. Other changes are machinery for land preparation and threshing. To reduce of labor cost, farmers shifted from transplanting to direct seeding of rice. However, they use very high rate of seeds (about 200 kg ha⁻¹) which in turn increasing seed cost, farmers still have low profit from rice. The participatory rural assessment (PRA) conducted in September 2003 indicated that the consequence of using of row seeder is the lesser cost for seed, fertilizer and pesticide inputs. The row seeder was introduced 1998, according to Tran Minh Tuan (2003), there are 23,859 row seeders are being used in the Mekong Delta. Of which, Can Tho is the highest adoption province with 9014 row seeders.

The feedback and the assessment of such

intervention program as row seeder can improve farmers' benefit received from the implementation. Attempt to assess the impact of this intervention on social aspects is at the frontier of social research in agriculture. A study in the Mekong Delta, Vietnam revealed that female workers contributed more than 44% of the total labor inputs in rice production (Chi et al. 1994). The women in the household with female-managed-farm can do all tasks related to rice production (Dung 2001; Chi 2003) beside their traditional tasks as transplanting, gap filling and re-transplanting, weeding and harvesting. There is a need to increase attention given to male and female farmers' perceptions and labor allocation due to the introduction and adoption of row seeder and its relation to actual crop establishment as well as the social impacts on the landless and poor farming households.

The objective of this study is to determine the adoption status and the socio-economic impact of row seeder adoption with focus on women workers from farming and landless households.

METHODOLOGY

Thoi Lai village (Co Do district) in Can Tho province has high rate of the row seeder

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adoption in the district (according to extension station office, 2003). Row seeder applied area occupies 16% of rice land. The landless household in the village occupies 14%.

The dominant cropping system in the village is rice-rice-rice + fish (56%) followed by rice-rice-rice (33%). Two rice system or rice – upland crop –rice is 3% each. The only upland crop system with fish is 5%.

The classification of poor and better-off households was based on the living standards defined by village leaders. The poor household has less than 0.5 ha of land. The income per capita is equal or less than 200 000 VND/month. Most of them have no television or electric machine. Their houses mostly temporary and some are semi-permanent. The better household has more than 0.5 ha of land. The income per capita is more than 200 000 VND/month. The house has furniture completely. They have television and electricity machines. Their houses are permanent and semi- permanent.

A complete census of the rice farming households in Thoi Lai village was conducted to find out the adopters and non-adopters of the row seeder. Among two groups of row seeding adopters and non-adopters, the husband and wife in 79 row seeding adopted household and 41 non- adopted households were interviewed directly and separately. Among them, poor and better- off households were classified. There are 60 poor women and 59 better- off women. Forty landless-women were included in this survey. The structured questionnaires were employed to collect data on socio-economic characteristics of respondents and household, the beliefs, attitude, income, input and output from rice production, access to training and information sources.

Data were summarized in the forms of frequency, mean and percentage. The qualitative information will be summarized by description and also applied the methods of quantified coding. The T-test (2-tailed) was applied to compared the differences on inputs and output between row seeding adopters and non adopters. Since the data comprises of both qualitative and quantitative, the multiple regression analysis was used to determine the

factors affecting the adoption of row seeder.

RESULTS AND DISCUSSION

Social economic characteristics of households:

Both row seeder adopters and non - adopters are in middle age and they worked on rice farming about 20 years. The education of the wife in adoption category is higher than the wife in non- adoption category. This indicates that better education of the wife can lead to better adoption of new technology. In both kinds of households with row seeder adoption and non- adoption, the husbands are major land owners. More than half of adopters (59%) applied row seeding in 3 rice crop reasons. One fifth of adopter (21%) applied row seeding in 2 rice crop seasons. The rest applied one rice season.

Farmers' access to row seeders, information and training:

Most of adopters started to apply row seeding in recent years (2000, 2001, and 2002). Most of them (71%) started to use row seeder in dry season (Winter- Spring). Both husband and wife of adopting households mentioned that they applied row seeders to reduce inputs as seeds, labors, fertilizer and pesticide. They have observed other farmers who applied row seeders with good outcomes as high yield and benefit. They were recommended by extension technicians from Mekong food company, radio and television. They used row seeder because of their trust of this technique.

Most of adopted farmers acquired row seeders by borrowing from the group and hamlet (51%). Nearly one- third of them (29%) bought row seeders. The rests were provided by village and extension station. If bought, they got subsidy of 40% of cost from the extension station. Both husband and wife perceived that a row seeder can be used for 30 crop seasons if it is treated carefully. It should be kept in shade after use.

More of the husbands (86%) than the wives (54%) are willing to buy a row seeder by their own cash if there is no subsidy. Some of them are not willing to buy by their own cash because of several reasons such as poor farmers, expensive row seeder, small land,

and being able to borrow easily. One- third of adopted farmers also are willing to form a group to buy and use one row seeder. This rate was lower in non- adopted farmers.

Regarding to access to the information related to row seeder, table 1 indicates that higher rate of the husbands in row seeding adopted households than those in non- adopted households exposed to demonstration trials, extension technician, farmers' clubs, village broadcast and television extension program. The wife had less exposed to these information sources as compared to their husbands.

Among information sources, extension technician and television program seem to be important to the husbands in adopted households, followed by village demonstration trials. Other farmers and neighbors seem to be influencing groups to

both husband and wife of adopted and non- adopted households.

More husbands (54%) than their wives (5%) in row seeding adopted households participated in technical training. The row seeder use was one of the contents of the training such as IPM, three reductions and three gains (the 3 reductions include reducing seed, fertilizer and pesticide inputs, the 3 gains are increasing yield, quality and benefit), rice production, variety and seed propagation, row seeder technique. Row seeding was recommended during the training. More husbands (70%) than their wives (29%) saw row seeded demonstration fields. Non- adopted farmers also saw row seeded demonstration field (61% of the husband and 35% of the wives). However, they have not yet applied row seeders because of unable to access a row seeder.

Table 1: Access to information related to row seeder

Information	Adopter		Non- adopter	
	Husband (n=79)	Wife (n=78)	Husband (n=39)	Wife (n=41)
<i>Access to information (%) (*)</i>				
Village demonstration trials	41	9	36	10
Extension technician	78	34	51	17
Farmers' club members	18	6	3	5
Other farmers, neighbors	71	68	64	63
Relatives	28	28	18	22
Village/Hamlet broadcast	36	18	33	22
Radio	33	19	8	5
Television	88	57	54	34

Input reduction in row seeding:

Both adopters and non- adopters said that applying row seeders reduces the amount of seeds because it sows in rows with thinner plant density than broadcasting. There was a space between rows. They also knew that row seeding requires less fertilizer than broadcasting. The plants also uptake some nutrients from the soil higher than in broadcasting due to less competition in plant population. It reduces 92 kg of fertilizer/ ha (or saving 270 thousand Vietnam dong). However, some of them are afraid of low

yield and wish the plant to be look good, they still applied high amount of fertilizer as broadcasting. This indicates that some of adopters do not have strong belief on row seeding.

The row seeding also reduces insecticide expense. Farmers explained that in row seeding, thin plant density without bushy leaves, airy and enough sunlight for the whole plant reduces insect pests. This status of the plants is not good habitats for insect reproduction. Row seeding save 238 thousand Vietnam dong of insecticide per ha.

Table 2: Fertilizer and insecticide cost reduction in row seeding

Inputs	Amount
Fertilizer reduced (kg/ha)	92
Kinds of fertilizer reduced (kg/ha)	
Urea	47
DAP	34
NPK	29
Fertilizer cost saved (1000 VND/ha)	270
Insecticide cost saved (1000 VND/ha)	238

Farmers' perception on labor input, leisure, health, hired working labor, net return from rice production and life improvement.

Farmers agree that less labors for rice production in row seeding than in broadcasting, especially in gap filling (replanting), weeding, cutting of off-typed plants, spraying chemicals and fertilizer application. Thus, it reduces the tasks of gap-filling and hand weeding. Farmers found easy to do these tasks along the rows because of spaces between rows. With row-seeding, female family labors in gap-filling and hand weeding reduced. Few cases of female family labors still have more works in gap-filling

and hand weeding because of bad weather and golden snail attack.

Adoption of row seeder increases the leisure time for female family members because of less time in weeding and gap-filling. If female family members are released from gap-filling and hand weeding work, most of them raise pig, chicken and duck side by side with doing housework, caring of children. They also engage in planting upland-crop, weeding on the rice bunds, working as hired labor on other farms. They relax, watch television, contact friends, or visit parents (Table 3).

Table 3: Work that female family members do if they are released from gap-filling and hand weeding work (*)

Work	No.	%
Doing housework, cooking	90	57
Raising pig, chicken and duck	68	43
Take care of children	34	22
Relax, watch television, contact friends, visit their parents	23	15
Planting upland crop, do hand weeding on the bunds	25	16
Work as hired labors on other farms	11	7
Small trading	7	4
Sewing	4	3
Work in City	1	1

(*) Multiple responses

Adoption of row seeder reduces women health problems as back pain, nail damaged due to less gap-filling and hand weeding work. Women said that skin itchy is reduced. They reduce exposure under sun, field water and insecticide. However, row seeding adoption caused job loss for women working as hired labor in gap-filling and hand weeding. In row seeding less labor need in gap-filling and hand weeding, thus these tasks mainly are

done by female family labor and no need to hire other women.

Most of farmers agree that row seeder adoption increases net return from rice production. The main reasons for higher net return included input reduction (seed, labor, fertilizer and pesticide) and well plant development. The row seeder adoption improves family life. Farmers have better

food in terms of quantity and nutrition. They mainly use money for buying supplies, clothes, for children education, raising animal. Some of them use net return to pay fuel for pumping water, fertilizer and pesticide, planting vegetables. They also use money to pay debt, for special occasions, preparing house, buying motorcycle, bicycle, motorboat, television, medicine....

Impact of row seeder on hired women labors:

Women hired labors lost job in gap- filling and hand weeding in row seeding. They find the alternative jobs such as working as hired labors in rice harvesting, finding hiring jobs in the fields with broadcasting, weeding in garden or find non- farm jobs as worker in sewing factory, small trading. They also raise animals, plant vegetable, catch fish or snails. Most of them find these jobs at other districts, and provinces or in village. Some of them work in city.

Benefit in row seeding:

Benefit from rice production depends on labor and material input. Row seeding reduces labor in rice production. Total labor days/ ha, in row

seeding in three rice crop seasons are lower than in broadcasting. Women contributed more labors in their traditional tasks of hand weeding and gap- filling than male labors. The imputed family- labors in row seeding in three rice crop seasons are significantly lower than those in broadcasting. Seed input (kg/ ha) in row seeding was significantly lower than those in broadcasting. Farmers reduce the amount of seed from 72 kg/ ha to 77 kg/ ha and they can save seed cost from 89 thousand Vietnam dong per ha to 121 thousand Vietnam dong per ha depending on seed price and season. Though the cost of the total material inputs for one rice crop season in row seeding is not significantly lower than in broadcasting, adopted farmers spent for rice production cost less than non- adopted farmers. Adopted farmers obtain net return from rice production significantly higher than those following broadcasting method in crop establishment. The Benefit- Cost ratio with excluding or including imputed family labors in row seeding is significantly higher than those in broadcasting. This proves that row seeding increases benefit from rice production (table 4).

Table 4: Cost benefit from rice production between two methods of crop establishment (1000 VND/ha)

Item	Adopter (n=79)	Non-adopter (n=41)	T value	Sig. (2-tailed)
Winter-spring				
Total material inputs	1953	2070	1.567	0.1200
Total hired labor	872	947	-1.160	0.2493
Imputed family labor	532	773	-2.742	0.0076
Rice income	13336	12077	1.999	0.0492
Net return	11117	8799	4.527	0.0000
Net return minus imputed family labor	10586	8026	4.809	0.0000
BCR (Benefit-Cost ratio)	4.24	3.15	4.580	0.0000
BCR (Benefit-Cost ratio, including imputed family labor)	3.42	2.26	5.849	0.0000
Summer-Autumn				
Total material inputs	2050	2417	-1.437	0.1550
Total hired labor	963	1061	-1.288	0.2021
Imputed family labor	530	978	-3.529	0.0008
Rice income	7962	7468	1.096	0.2764
Net return	5073	4013	1.855	0.0674
Net return minus imputed family labor	4544	3035	2.471	0.0158
BCR (Benefit-Cost ratio)	1.86	1.39	2.353	0.0213

Table 4: continue

Item	Adopter (n=79)	Non-adopter (n=41)	T value	Sig. (2- tailed)
BCR (Benefit-Cost ratio, including imputed family labor)	1.44	0.87	3.043	0.0033
Autumn-Winter				
Total material inputs	1935	2078	-1.669	0.0980
Total hired labor	993	1102	-1.272	0.2074
Imputed family labor	565	1097	-3.143	0.0031
Rice income	8570	6873	3.246	0.0018
Net return	5652	3868	3.404	0.0011
Net return minus imputed family labor	5086	2771	3.855	0.0003
BCR (Benefit-Cost ratio)	2.14	1.30	3.708	0.0004
BCR (Benefit-Cost ratio, including imputed family labor)	1.59	0.78	4.267	0.0001

Analysis factors affecting adoption of row seeder indicates that most physical conditions of the rice field do not affect the adoption of row seeder. The topography (high field, level field or low field) does not influence the adoption of row seeder. The distance from the rice field to irrigation source also does not affect the adoption. Good soil type is necessary condition for row seeding adoption. The soil type mentioned by farmers refers to soil fertility (good, medium or bad).

Contacting extension worker significantly increase row seeding adoption. Farmers with higher household income are faster adopters. Reducing of seed amount is significant and important factor for adoption of row seeder. Education of the wives also influenced the adoption of row seeder; however, this effect is weak compared with above-mentioned factors. Farmers with smaller rice land are faster adopters because small rice field is easy for them to test the new technology (Table 5).

Table 5: Affect of socio-economic factors on adoption of row seeder

Factors	Coefficients	Std. Error	T value	Sig.
(Constant)	1.0328	0.2309	4.4721	0.00002
Seeing field demonstration	0.0395	0.0778	0.5073	0.6130
Contact extension worker	0.1720	0.0811	2.1212	0.0362
Watching extension program on Television	0.0739	0.0952	0.7764	0.4392
Education of husband	-0.0078	0.0132	-0.5935	0.5541
Education of wife	0.0332	0.0170	1.9500	0.0538
Rice land area (ha)	-0.0339	0.0149	-2.2710	0.0251
Amount of fertilizer use (kg/ha)	-0.0001	0.0003	-0.3892	0.6979
Amount of seeds used (kg/ha)	-0.0043	0.0008	-5.3740	0.0000004
Household income (1000 VND)	0.000003	0.000001	2.2422	0.0270
Non-farm income (1000 VND)	-0.000005	0.000007	-0.6930	0.4898
$R^2 = 0.45$	$F = 8.832$			

Impact of row seeding adoption on poor women

Fifty percent of poor women work as hired labors for other farms. Most of them do hand weeding (80%), gap- filling (re- planting) (77%) and rice harvesting (40%). Their income from these jobs vary from 120 to 3180

thousand Vietnam dong per year. Among women who work as hired labors, 57% of them lost gap- filling job and 27% lost hand weeding job from the introduction of row seeder. Thus, they find off- farm labor (40%) in other place where the row seeding adoption has not yet at high extent. They also work as

hired labor in hand weeding for vegetables. Most of them (70%) raise pig at home. They plant vegetables, collecting snail, do small trading or help their husbands' work. More than half of them (55%) do alternative jobs from lost of hiring job from weeding and gap-filling at home. One fourth of them (23%) find jobs at other districts and provinces. More than half of them (55%) said that these alternative jobs are easy to find. The rest find difficult. The poor women are affected from introduction of row seeder because they lost hiring jobs. They have not enough money for daily life, food and health care. Most of them are not satisfied with the income from alternative jobs because of low income and not regular jobs. One third of them feel satisfied because they work at home, and they like to help husband and more stable in income.

Impact of row seeder adoption of better- off women

Majority of better- off women (92%) decrease their labor in gap- filling and weeding from introduction of row seeder. They decrease their labors because of less weeds and gaps in the field resulted from well land preparation, growing well plants, less death of seedlings. Only 2% of them increase their labor in gap-filling because of golden snail attack their field; they still do weeding as usual due to dry field.

Most of better- off women (81%) has time to spend for other activities due to their labor in gap- filling and weeding decrease. They have more time to care of children, husband and house (86%). They spend that time for raising animals (81%), planting vegetables (22%), small trading (10%). Some of them work as hired labor, sewing, irrigation fruit tree, or relax and talking with other neighbor women. Forty seven percent of these jobs generated income with the average of 4581 thousand Vietnam dong per year.

One- third of better- off women (32%) have more time for leisure and socialization due to their labor input declined in gap- filling and hand weeding. They use their free time from gap- filling and hand weeding to raise animals, care of children, relax at home, plant vegetables, or work as hired labors. They stay

home because their houses are too far from town without means of entertainment.

Half of better- off women (49%) feels better health from introduction of row seeder. They said the back pain, headache and rheumatism have reduced. They feel less tired than previous time with broadcasting. They also increase weight and reduce nail damage because they less contact with mud and water in the fields.

Majority of better- off women (90%) are happy with the introduction of row seeder because they have less work in the field, better health, and input deduction to save money. They use these save money to hire labor in rice production.

Impact of row seeder on landless women

All of landless women work as off- farm labors. Gap- filling and hand weeding are the hiring jobs of all landless women. They also are hired to do rice harvesting, threshing and rice drying. They earn VND 530,000 from gap- filling and VND 517,000 from weeding per year beside the income from other hiring jobs. With the introduction of row seeder, 97% of landless women lost gap- filling and hand weeding hiring jobs because less gaps to fill- up and less weeds in the field. After lost of these jobs, 43% of them are jobless. The rest find the off- farm works as hand weeding for other crops rather than rice (fruit trees, upland crops). They do animal raising, planting vegetables, small trading, fishing with husband, sewing, catching snail. They do the above jobs at home (38%), in village (28%) and other provinces (10%). The longest distance to do alternative job is 250 km from home. The alternative jobs of landless women are not easy to find (85%) and the jobs are not regular (93%). In case of irregular jobs, landless women encountered shortage of money for daily food and health care. This leads to difficult in living of landless family (75%). They have to be in debt (25%). After losing of gap- filling and hand weeding jobs, they find the alternative income which are not satisfied because it is low income and not regular.

CONCLUSION

Thoi Lai village has 16% of rice area applied

row seeder generally. Within row- seeding adopted farmers, 59% of their rice land is applied row seeding. Most of them applied row seeding for 3 rice seasons per year (Winter- Spring from November to February, Summer- Autumn from March to June and Autumn- Winter from June to September). These names of crop seasons are called by farmers in Thoi Lai village. Farmers applied row seeder followed recommendation from extension technician, 3 reductions 3 increasing program, followed neighbors' practices. Most of adopted farmers acquired row seeder by borrowing from hamlet, and farmer group. They also are provided by village and extension station. Nearly one-third of them bought row seeders for themselves with 40% of subsidy. Most of them access to the information related to row seeder from extension technician, television, village demonstration trials, other farmers, village and hamlet broadcast. More of the husbands than their wife access to the information sources. Information from extension technician is ranked as the most important by male- adopted farmers. These farmers also participated in training related to row seeders as rice production, IPM, three increases three reductions, seed multiplication, row seeder technique.

Most of male and female farmers have positive perception of row seeder. They believe that row seeder reduces seed, fertilizer amount and insecticide cost because of thin

plant density, enough sunlight, airy and less competition for nutrients from soil. They also said that row seeder adoption increases rice yield, reduces labor input compared with broadcasting especially in gap- filling and hand weeding. These are traditional tasks of women. Thus, row seeder increases leisure time of family women. They also have more time for raising animals, doing household work, caring of children, relax or working for income as small trading, sewing and food processing. Row seeder adoption also reduces back pain, headache, nail damaged in family women because they less expose under sun and less contact with mud and field water.

Row seeder increases net return from rice production and improves family life in terms of better food, clothes, supplies, medicines, children education... However, the negative impact of row seeder is losing jobs in gap-filling and hand weeding of hired women labors that are poor and landless. They have to encounter difficulty in daily life as food, health care because of low income from irregular alternative jobs. Input output analysis indicates that row seeder adoption increases benefit- cost ratio as compared with broadcasting. Contacting extension technician and household income positively and significantly affected adoption of row seeder. Education of the wives also light affected on this adoption. Soil conditions affected the adoption. Farmers who have good or relatively good soil fertility are adopters.

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SUMMARY IN VIETNAMESE

Ảnh hưởng của kỹ thuật sạ hàng đến sản xuất và đời sống nông dân ở xã Thới Lai, Cờ Đỏ, Cần Thơ

Khảo sát tình hình tiếp nhận kỹ thuật máy sạ hàng và tác động của nó đến đời sống kinh tế xã hội của lao động nữ từ việc phỏng vấn 240 nam nữ nông dân có ruộng lúa và 40 nữ không đất. Ruộng trình diễn sạ hàng, tiếp cận cán bộ khuyến nông, hội nông dân, loa đài phát thanh ở xã, chương trình khuyến nông truyền hình, và tham dự lớp tập huấn như IPM, ba giảm ba tăng, kỹ thuật sản xuất lúa, kỹ thuật nhân giống là các nguồn quan máy sạ hàng. Sạ hàng giảm được lượng giống vì mật độ cây lúa thưa hơn sạ lan. Vì vậy ruộng sạ hàng cần ít phân bón hơn lúa sạ lan. Hơn nữa cây lúa sạ theo hàng cũng hấp thu được chất dinh dưỡng từ trong đất nhiều hơn cây lúa sạ lan do sự cạnh tranh trong quần thể cây lúa ít đi. Nông dân giảm 92 kg phân bón/ha (tức là tiết kiệm được 270.000 đồng). Sạ hàng giảm thuốc trừ sâu. Họ giải thích rằng sạ hàng thì mật độ cây lúa thưa, tán lá không um tùm, thoáng khí và tiếp nhận đủ ánh sáng và tình trạng này của cây không thích hợp cho sự cư trú và sinh sản của côn trùng. Sạ hàng tiết kiệm được 238.000 đồng thuốc trừ sâu/ ha. Họ thấy rằng sạ hàng giảm công lao động sản xuất lúa khi so sánh với sạ lan, đặc biệt là khâu cấy dặm, làm cỏ, cắt lúa, phun thuốc trừ sâu và bón phân. Vì vậy sạ hàng tăng thời gian giải trí cho nữ lao động gia đình. Họ xem truyền hình, thăm bạn bè và bà con. Họ cũng có thời gian làm thêm công việc khác để có thu nhập như nuôi heo, gà vịt, trồng cây màu, làm thuê cho ruộng nông dân khác. Áp dụng máy sạ hàng làm giảm bệnh tật cho phụ nữ như đau lưng, giảm thúi móng chân và ngứa da do giảm lao động ngoài trời, giảm ngâm mình trong nước ruộng và giảm tiếp xúc với thuốc trừ sâu. Áp dụng máy sạ hàng tăng lợi nhuận hơn sạ lan nên sạ hàng có thể cải thiện đời sống gia đình. Phần lợi nhuận thêm này nông dân có bữa ăn đầy đủ lượng và chất hơn trước đây. Họ cũng tích lũy tiền lợi nhuận này để mua đồ dùng trong gia đình, quần áo, cho con cái học hành, phát triển thêm chăn nuôi trong gia đình, và dùng đầu tư cho lúa như mua phân bón và thuốc trừ sâu và chi phí bơm nước. Họ cũng đã sử dụng tiền này để trả nợ, đi đám tiệc, sửa chữa nhà, mua xe máy, xe đạp, ghe máy, truyền hình, thuốc men ... Phân tích các yếu tố ảnh hưởng đến sự tiếp nhận máy sạ hàng cho thấy các điều kiện của đất lúa không có ảnh hưởng đến việc tiếp nhận máy sạ hàng của nông dân như độ cao thấp (gò, trũng hay đất bằng phẳng), khoảng cách từ ruộng đến nguồn nước tưới. Trái lại tiếp cận thông tin khoa học kỹ thuật vô cùng quan trọng trong việc tiếp nhận sạ hàng. Sự tiếp xúc với cán bộ khuyến nông có tác động tích cực đến sự tiếp nhận máy sạ hàng của nông dân. Hộ có thu nhập cao hơn thì sự tiếp nhận máy sạ hàng nhanh hơn. Trình độ văn hoá của người vợ cũng tác động đến việc tiếp nhận máy sạ hàng Tuy nhiên, áp dụng máy sạ hàng gây mất việc đối với phụ nữ chuyên kiếm sống bằng cấy dặm và làm cỏ thuê cho lúa. Tất cả những phụ nữ không đất đều làm thuê trên ruộng đất của người khác. Cấy dặm và làm cỏ là công việc làm thuê của 100% phụ nữ không đất. Họ cũng làm thuê những công việc khác như cắt lúa, suốt lúa và phơi lúa. Họ kiếm được 530 ngàn đồng từ công việc cấy dặm và 517 ngàn đồng từ công việc làm cỏ mỗi năm bên cạnh nguồn thu nhập từ những công việc làm thuê khác cho cây lúa. Với sự áp dụng máy sạ hàng, 97% phụ nữ không có đất mất công việc cấy dặm và làm cỏ thuê. Sau khi mất những công việc này, 43% nữ không đất không tìm được việc làm khác. Số còn lại tìm công việc như làm cỏ thuê trên những cây trồng khác (cây ăn trái, cây màu). Họ cũng chuyển sang chăn nuôi, trồng rau, buôn bán nhỏ, bắt cá, bắt ốc, may quần áo thuê,... Tìm kiếm công việc khác thay thế cho việc cấy dặm và làm cỏ thuê đối với phụ nữ không đất thật khó khăn và khi tìm được thì việc làm và thu nhập cũng không ổn định. Vì vậy với đà phát triển kinh tế xã hội hiện nay, việc ứng dụng khoa học kỹ thuật mới để tăng kinh tế chung, cần có chính sách hỗ trợ công ăn việc làm ổn định cho nhóm nữ nghèo không đất.