

건전한 농촌환경을 보존하기 위한 여성의 역할

- 한국의 견해 -

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The role of women maintaining a healthy rural environment : A view from Korea

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국문요약

한국의 급속한 경제발전과 공업화 과정에서 특히 연령층이 20~49세의 젊은 농촌의 여성들이 대단히 많이 도시로 이동하였다. 농촌에서 농작업에 종사하는 여성들은 주로 수도, 채소 및 과수 재배에서 많은 육체적인 노동을 하고 있다. 특히 농촌에서 농약을 산포하는 일은 여성들이 많이 하고 있다.

1960년도 이후 1992년도에 달하는 지난 32년 기간동안에 국민소득 수준이 1%증가됨에 따라서 농촌여성이 667명씩 감소되었다는 사실이 단순회귀 분석에 의하여 증명되었다. 그리고 농약을 산포한 여성들의 암에 의한 사망율이 산포하지 아니한 여성들 보다 높다는 사실이 실증적으로 증명되었다.

1968년도에 2정보의 농경지 규모에서 전체 노동시간 가운데 여성의 노동시간이 차지하는 비율이 55,72%로서 나타나고 있다. 그런데 1992년도에 동일규모에서 여성들이 노동시간이 차지하는 비율은 44,58%로서 감소되고 있다.

앞으로 건전한 농촌의 환경을 지속적으로 보존하기 위하여서는 여성들의 귀중한 생명을 보존하고 동시에 소비자들의 건강을 보호하는 유기농법이 실천되어야 할 것이다.

*. 본 논문은 1994년도 6월 1~3일 사이에 소련연합국 모스크바에서 개최되는 "여성, 정치, 환경활동"이라는 제목으로 미국 Wisconsin대학교와 소련 국제경제연구소가 공동으로 주관하는 국제회의에 발표되었음.

본 학술회의에 참석하기 위하여 재정적으로 지원하여 주신 학술진흥재단에 감사드립니다.

Role of Women in Maintaining Healthy Rural Environment ¹⁾

Introduction

The economic estimation of productive activities of rural women is rather difficult in Korean rural society. Most farms are small having an average one hectare of arable land. The rice production in paddy fields is one of serious labor intensive farming method. Traditionally, most of the rice transplanting and harvesting as well as vegetable and fruit works were done by women and men. For some time, the controlling of pests by applying insecticides has been done by women in rice, vegetable, and fruit production.

Of course, there are many industrial women workers in Korea. It is rather difficult to estimate labor productivity of women in peasant farm households in Korea. One serious problem in rural areas is the shortage of labor forces both women and men. There has been a very rapid migration of rural women during last 32 years(1960–1992).

I have tried to analyze rural migration of women during past 32 years using linear regression analysis. The following results can explain decreasing numbers of rural women in Korea.

$$Y = 7287.282 - 0.667X \dots\dots\dots (1)$$

(150.618)(0.050) Standard Error

$$R^2 = 0.853 \quad F = 180.368$$

Y = Numbers of female in 1000, X1 = index of GNP

One percentage increase of GNP has decreased 667 rural female during last 32 years.

Figure–1 shows the rapidly decreasing numbers of rural women by different age group during the past 32 years(1960–92). There is a very rapid decreasing trend of women age group 20–49 years old than any other age group. Most rural younger age went to urban areas to find jobs mainly in service sectors as well as industries.

However, the women age group over 60 years old is rather increasing in rural areas.

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Figure-2 shows a decreasing index trend of migration of rural women in Korea during 1960-92 years. This is a very serious rural problem in Korea at present.

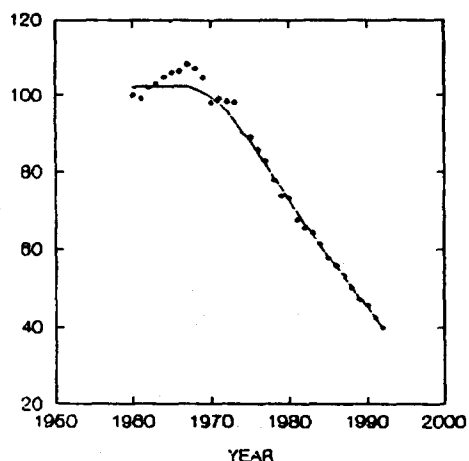
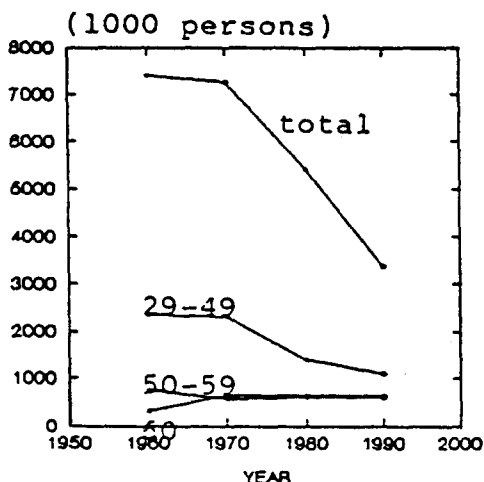
The Ministry of Agriculture has begun to survey farm book-keeping since 1960. There was also farm book-keeping after 1945, but the data is unreliable and therefore not used. It is rather unstable to use those rural farm survey data now.

It is very interesting to note that there was a survey of farm labor hours by women by size of farms since 1960. Until now, nobody has done any kind of scientific research on rural women labor and environmental problems. There are certainly rural environmental problems such as applying pesticides in rice, vegetables, and fruit farms in Korea.

Migration of rural women

Fig-1 : Migration of rural women by age(1960~90)

Fig-2 : Migration of women(1960~92 index)



Appendix Figure-1 shows decreasing labor hours of women by size of farm between 1962 and 1992. There are many kinds of farm machinery in farm work in recent years such as tractors, cultivator and combine harvesters etc.

The labor hours of rural women has decreased in smaller size of farm such as 0.5 hectare, 0.5-1.0 hectare and 1.0-1.5 hectare. However, the labor hours of women is increasing in larger sized farms over 1.5-2.0 hectare and over 2.0 hectare. There are certainly more manual labor hours in larger sized farms.

In average farm size, 30.8% of the total farm work was done by women in 1962, while 45.7% of farm work was done by women in 1992. There is certainly an increasing trend of labor hours of rural women in Korea in larger sized farms.

In rice, vegetable, and fruit production, there are heavy application of pesticides. There are many ecological, as well as damages of rural life of women, with chemical poisoning. There are also seri-

ous problems of nitrate in ground water and chemical residues in food contamination. However, this is a rather difficult field to analyze by scientific method of analysis (degree of chemical residues in every food products in every farm and year).

The Ministry of Health has published a research report on health related damages caused by pesticides of rural areas.

Figure—3 is results of death rates caused by cancer of men and women applying pesticides.

There is certainly less percentage of death rates of women who do not apply any kind of pesticides.

A new method of controlling pests should be developed to keep healthy rural women engaged and not engaged in pesticide application. This will certainly have better social, ecological and economic benefits for peasant farmers in Korea and other parts of the world.

Fig-3 : Death rates caused by cancer with & without application of pesticides

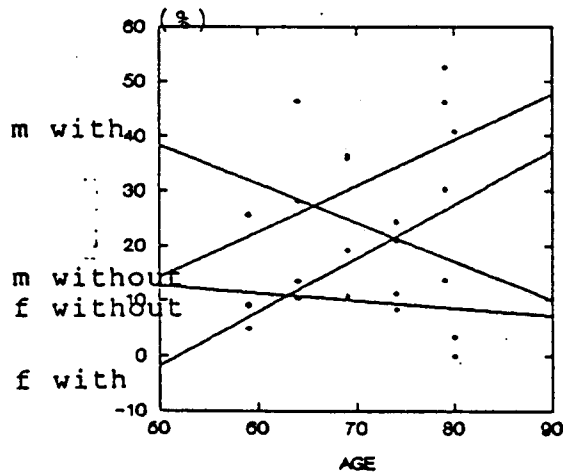


Table-1 shows results of computation made by using a linear programming method in order to show differences of labor hours between women and man on a Korean model farm in 1968 and 1992. The model farm size has one ha rice paddy and one hectare dryland. This is actually above the average farm size in Korea. There are only family labor hours both for women and men.

Table-1 : Comparison of optimal farm organization between 1968-1992

	1968(A)	1992(B)	B/N
Objective Function(1000 Won)	293.3	18.380	6.627
Rice(10a)	10	10	
Potato(10a)	10		
Cabbage(10a)		10	
Labor Hours			
Women	1384(55.72%)	461(44.58%)	33.31
Man	1100(44.28%)	573(55.42%)	52.09
Total	2484(100.0%)	1034(100.0%)	41.63

Source : Author's own calculation

*. November 5, 1993.1 US \$ = 807.30 Won 18.380.000Won(22.767 \$)

The earliest analysis of farm enterprise cost and income was done in 1969 by the Ministry of Agriculture and Forestry. It is usual to have farm manager and wife on the farm. There are survey of labor hours by women and men at that time.

The Office of Rural Development in Suweon has published data of farm management analysis in 1993. It might be very interesting to compare labor hours of women and men in 1968 and 1992. It is very surprised to know that farm women worked 55.72% of the total farm labor hours with 2ha model farm in 1968, while she worked 44.58% in 1992. There is also interesting point to know the decreasing labor hours for women and men during last 24 years. The role of women on the small size of farm is one of most important factors of agricultural production.

Until now, there is less scientific evidence of organic, biological, ecological, bio-dynamic and low input sustainable agriculture in Korea. This kinds of new farming methods may certainly help to keep life of rural women, environment and urban consumers in the future.

Conclusion

In the process of rapid industrialization of the Korean economy, the migration of rural women especially in age group 20-49 posed one of most serious problems in rural areas. There are certainly various kinds of farm works done by rural women such as spraying pesticides on rice, vegetables and fruits. Until now, there was less scientific research on the analysis of effects of chemical poisoning on the state of health of rural women, damages to the rural environment and chemical residues in canned food products. At present, there is an increasing trend towards reduction of chemical fertilizers and pesticides which cause serious experiences of chemical poisoning. There is a higher death rate of rural women caused by cancer who has previous experiences of spraying pesticides than women without any experience of spraying. The best method of farming in Korea as well as in other part of the world should be without application of any kinds of pesticides. To maintain healthy life of rural women, environment, good food quality the survival of consumers and good soil condition in our living earth, agricultural chemical should be reduced.

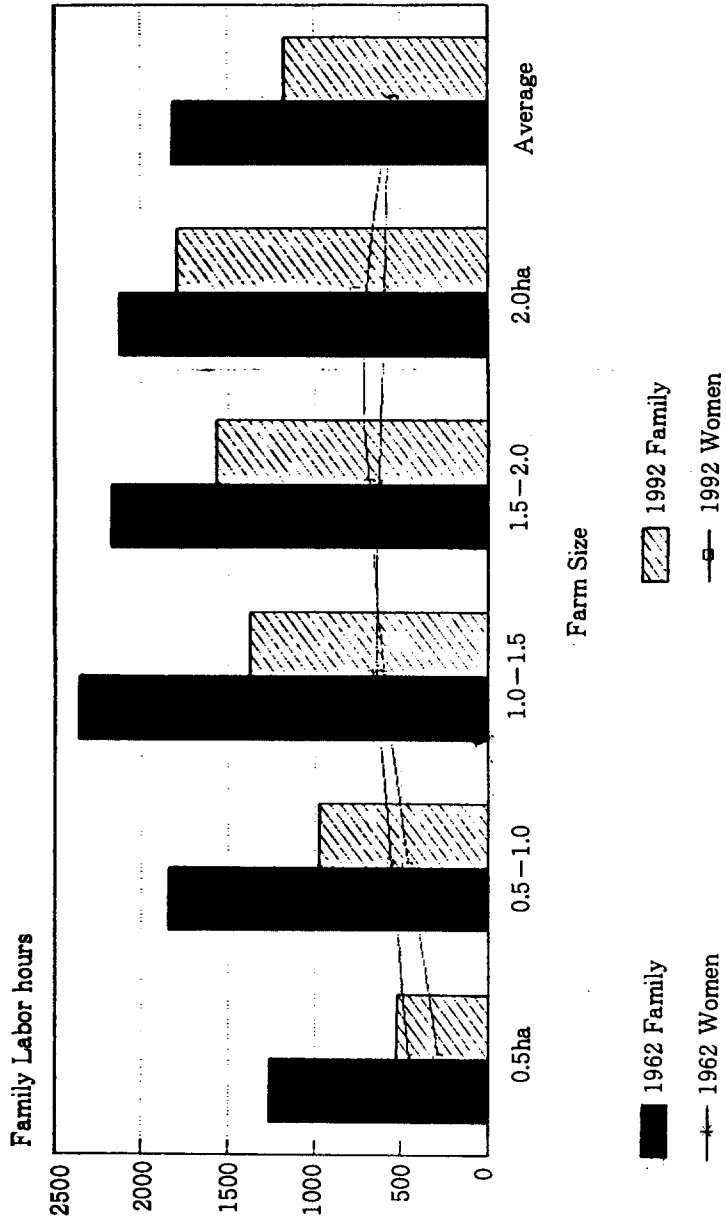
It might be certainly necessarily to have further empirical research on organic farming methods in Korea in connection with economic analysis of conventional and organic farms to understand economic aspects of organic farming method. At the same time, the role of women in rural area should be very important to maintain healthy rural environment by doing organic farming methods.

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Ap. Fig-1 : Family & Women Labor
(Hours 1962--92)



(J.M.Kim)