

## Mapping out Gender Dynamics of Farming Systems of Haryana

Indu Grover and Nishi Sethi

*Department Home Science Extension Education, CCS Haryana Agricultural University,  
Hisar 125004, Haryana, India  
E-mail: grovers@hau.ernet.in*

**KEYWORDS** Gender; farming systems; time utilization pattern; technology usage; wage differentials

**ABSTRACT** The study was conducted on the three major farming systems of Haryana viz. wheat-cotton, vegetable and dairy farming system. After appropriate selection of districts and villages, 120 families were selected from different land holding categories with 40 each per system. Both male and female farmers were interviewed. Majority of men and women in wheat-cotton and vegetable farming system were older compared with dairy farming system, majority had low educational profile, married, Hindus, *jats* by caste in wheat-cotton and dairy farming system and from backward caste in vegetable farming system, income varied between the farming systems depending on size of landholding or number of animals. Land was largely owned by men. Daily time spent pattern revealed wide gender differentials and during peak season men spent 8.5 hours and 7.0 hours in wheat-cotton and vegetable farming system in productive field activities and women 6.30 hours and 7.35 hours, respectively while in dairy farming system men spent 8.78 hours and women 3.42 hours. Migrant labour was involved in dairying by few. In all farming system, women spent more hours than men in reproductive work involving various household tasks and had a much longer working day with multiple tasked jobs. On the wage front women got 2/3<sup>rd</sup> of the wage paid to men. On the technology front they rarely used improved tools and equipment while men often used tractor for varied tasks. The gender dynamics reveals subordinate position of women and was mainly based on sex, land holding size and nature of farming system.

### INTRODUCTION

The farming systems of the world have been classified into eight categories viz. small holder irrigated, wetland rice based, small holder rainfed humid, small holder rainfed high, small holder rainfed dry/cold, dualistic, coastal based and urban based (www. fao.org). Each farming system has distinct characteristics while work in farming communities is governed by various socio-cultural dimensions that affect gender roles, responsibilities and division of labour. Though women undertake dual burden of productive and reproductive roles it is the men who are considered the bread winner.

Agriculture is the mainstay of the Indian economy, a way of life for million of farm families with pre-dominance of small and marginal farmers and landless labourers. As per the 2001 Census, work participation rate is 39 per cent with 41.8 and 32.2 per cent in rural and urban areas, respectively (Singh, 2006). Indian agriculture is known for its multi-functionalities of providing employment, food, livelihood and social security. A proportion of 27.1 of rural population lives below poverty line and the official poverty line Rs. 3,942 per person per annum for rural people, in the year 2000, reflect the fact that people are poor despite work as

that they are getting low wage (Singh, 2006) or low profit. The participation of both men and women in agriculture takes place in mutually dependent as well as independent roles, cutting across processes from production to processing, marketing as well as decision making (Census of India, 2001; AICRP, 2003; Alam, 2004). Although Indian agriculture is making steady progress it is also getting feminized as men move away in search of better jobs (Grover, 2002). The traditional Indian values expect the women to be subordinate, altruistic, self sacrificing, passive, submissive and quite (Gupta, 1997). In India, more than in most other places, women are perceived as 'second sex', dependent on men and it is a tragedy that not only men but also most women hold the same view because of their traditional orientation (Agarwal and Rao 2004). Women farmers despite their significant contribution, for long have remained an invisible work force, neglected by agricultural research and extension systems and outside mainstream development ( Prasad et al. 1988, Sharma, 2004 ). Women tend to do more work in absolute terms, and the work they do is more likely to be unorganized, unvalued and unrewarded. Gender inequality is accepted as a norm and not challenged. The underlying problem of lower status of women is that the society is highly patriarchal and women live in a system of

structured inequality having less access to education, nutrition, productive resources and technology ( Grover, 2001 ). Whatever might be the complications and contradictions in assessing the status of women in India, the fact remains that the real progress and development of any society lies in the equality of all citizens (Tapan, 2000). Social perceptions and norms, strongly influenced by gender dynamics, have a significant impact on the fallback position of women, whose contributions to the family are typically undervalued by both family members and policymakers (Agarwal, 1997). For creating a more equitable and just society an urgent need is being felt for gender related data in various sectors including agriculture so as to build a better understanding and proper balancing of resources there by creating a more favourable gender relations and work environment. The objective of the present study was to map out the gender dynamics of the different farming systems of Haryana , a predominately agriculture state.

### METHODOLOGY

The three most prominent farming systems of Haryana investigated for gender dynamics were wheat-cotton, vegetable and dairy farming system . The selection of districts and villages for these three farming system was done in consultation with university level experts. The districts selected were namely Hisar and Fatehabad for wheat cotton farming system, Hisar and Jind for Dairy farming system and Hisar and Sonpat for vegetable farming system. From these

selected districts two villages per district were selected for each farming system. From each of the farming system 40 families with 10 farmers each from large, small, medium and landless category per system were selected as sample respondents. Thus a total of 120 farm households were selected. Data were collected with the help of gender sensitive questionnaire developed for the purpose. Data analysis was done as per standard procedure.

### RESULT AND DISCUSSION

**Gender Profile:** The gender profile of the respondents in the three farming systems as presented in Table 1 reveals that majority of men (45%) and women (42.5%) in wheat -cotton and vegetable farming system (52.5% each) were in the age group 35-50 years while in dairy farming system 47.5 % of both men and women were in the age group 18-35 years, majority of both men and women in all three systems had low educational profile though men faired slightly better while a small percentage of men in dairy and vegetable farming were graduates (7.5%) and 2.5 % women each in wheat-cotton and vegetable farming system had similar quali-fication. At the same time 5.0 % men in vegetable and wheat-cotton farming were post-graduates. Regarding caste in wheat – cotton and dairy farming system majority were *jats* while in vegetables farming majority were from backward caste (BC). It appears that farming is practiced by young and old, women farmers have lower educational qualifications, caste plays a predominate role in determining the type of farming

**Table 1: Gender profile of farmers in different farming systems of Haryana**

Category	Dairy (n-40)		Vegetable (n-40)		Wheat (n-40)	
	Men	Women	Men	Women	Men	Women
<i>Age</i>						
18- 35 yrs	47.5	47.5	35.0	37.5	27.5	40.0
35 – 50 yrs	27.5	27.5	52.5	52.5	45.0	42.5
>50 yrs	25.0	25.0	10.0	10.0	27.5	17.5
<i>Education</i>						
Illiterate	35.0	47.5	37.5	72.5	40.0	70.0
Primary	32.5	27.5	32.5	12.5	20.0	10.0
Secondary	10.0	25.0	10.0	7.5	22.5	10.0
Higher secondary	15.0	-	5.0	2.5	5.0	7.5
Graduation	7.5	-	7.5	2.5	2.5	2.5
PG	-	-	5.0	-	5.0	-
<i>Caste</i>						
SC	10(25.0)	10(25.0)	5 (12.5)	5 (12.5)	4 (10.0)	4 (10.0)
BC	15(37.5)	15(37.5)	26(65.0)	26(65.0)	12(30.0)	12(30.0)
Others ( <i>Jat</i> )	15(37.5)	15(37.5)	9 (22.5)	9 (22.5)	24(60.0)	24(60.0)

system practiced, even educated youth are practicing agriculture may be not by choice but by compulsion of no better job option and younger age group is practicing dairy farming . It is found that only in dairy farming young migrant labour from Bihar worked as labour helping bigger dairy owners.

From Table 2 depicting income and family details it is evident that income varied between the farming system, depending on size of landholding, number of animals, profitability of the farming venture with majority (35%) in vegetable farming having income in the range of Rs. 30,000-Rs. 50,000 compared to 27.5 % in wheat-cotton farming having income in the range of Rs. 10,000 –Rs.30,000 followed by 25% in the income range of Rs. 50,000 to Rs.1 lakh respectively while in dairy farming majority of 35% had income between Rs. 10, 000 to Rs. 30,000 and 20% had income above Rs. 1 lakh . Majority had joint family in all farming system though the percentage was highest in dairy farming system. It is evident that none of the three farming system yield high income and yet families in rural areas remain highly dependent on them. This finding is in line with views of Singh (2006) that people especially in rural areas are poor despite work.

The farm labour in all farming systems generally receives the least share as they are employed on wage basis.

**Farm Ownership:** From Table 3 depicting details of farm ownership profile it is noted that regarding ownership of land 75%, 75% and 60% land was owned by males in wheat-cotton, vegetable and dairy farming system, respectively. This is so as 25 % were landless labour in the two farming system while in dairying 25% were employed labour and this venture is adopted by families even without land as this is livestock based. At the same time 30 % of farm families in wheat –cotton, 22.5 % in dairy and 10% in vegetable farming system were leasing in land with ownership of males while land was leased out too with 7.5%, 10% and 25% in vegetable farming, dairy farming system, and wheat –cotton respectively. Only 10% land is leased in and another 7.5% land is leased out. The terms and conditions governing nature of land leased in or out are as per agreement between the parties. It is fairly a common practice that the big land owners lease out land. Dairy farmers lease in land mainly to grow fodder. Land is a highly productive resource and this continues to be largely in the name of male members as per tradition while both genders have access to it for work.

**Table 2: Annual income and family details in the farming systems**

Parameters	Category	Dairy	Vegetable	Wheat
Annual Income (Rs.)	<10,000	2(20.0)	8 (20.0)	4 (10.0)
	10 – 30,000	14(35.0)	6 (15.0)	11 (27.5)
	30 – 50,000	6(15.0)	14 (35.0)	6 (15.0)
	50 – 1 lakh	10(25.0)	2 (5.0)	10 (25.0)
	> 1 lakh	8(20.0)	9 (22.5)	9 (22.5)
Type of Family	Joint	32(80.0)	23 (57.5)	25 (62.5)
	Nuclear	8(20.0)	17 (42.5)	15 (37.5)
Size of Family	< 5	15(40.0)	2 (52.5)	19 (47.5)
	6 – 8	7(17.5)	8 (20.0)	9 (22.5)
	9 and above	18(45.0)	11 (27.5)	12 (30.0)

**Table 3: Farm ownership profile of different farming system**

Particulars	Wheat		Vegetable		Dairy	
	M	F	M	F	M	F
Owned by the family	30(75.0)	1(2.5)	30(75.0)	-	24(60.0)	-
Leased in land	12(30.0)	-	4(10.0)	-	9(22.5)	-
1/2	5(12.5)	-	2(5.0)	-	4(10.0)	-
1/4	3(7.5)	-	-	-	2(5.0)	-
Annual rent	4(10.0)	-	2(5.0)	-	3(7.5)	-
Leased out land	10(25.0)	-	3(7.5)	-	4(10.0)	-
1/2	2(5.0)	-	2(5.0)	-	3(7.5)	-
1/3	4(10.0)	-	-	-	-	-
1/4	1(2.5)	-	-	-	-	-
Annual rent	3(7.5)	-	1(2.5)	-	1(2.5)	-

**Time Spent by Gender on Productive and Reproductive Work:** Both men and women spent different amount of time on productive and reproductive work. From Table 4 presenting details of productive work it is noted that in wheat cotton farming system men spent 8.5 hours and women 6.30 hours in field work compared with 7.0 hours by men and 7.35 hours by women in vegetable farming. In dairying men spent 8.78 hours and women 3.42 hours. Thus women in vegetable farming spent maximum time in field related tasks. For reproductive work that includes household tasks, from Table 5 it is seen that in different farming systems women spent 3.84 hours, 4.08 hours and 4.32 hours in household work in vegetable, wheat-cotton and dairy farming system respectively while men in vegetable farming system devote 0.32 hours to this work compared with no time devoted by them in other two systems. Further, men in all three system avail more sleep and spend more time on entertainment than women counterparts. Thus women are over worked, get less leisure time and slept fewer hours. It is noted that there is no monetary reward for household jobs while family labour is taken for granted. The dual share of

reproductive work, including varied household tasks along with looking after the young and aged and as partner with male counter parts in productive work are undertaken by women. However, the work situation and structures are gender and hierarchically related with women from small, marginal and landless class households spending more time on field activities. Women tend to do more work in absolute terms, and the work they do is more unorganized, unvalued and unrewarded. The findings get support from Jha (2004) and Agarwal (1997) who argue that social perceptions and norms, strongly influenced by gender dynamics have a significant impact on the position of women whose contributions are undervalued.

**Extent of Gender Involvement in Different Farming Operations:** From the data given in Table 6 it was noted that in all farming system, operations in which men and women are involved differ substantially. In wheat-cotton system, from the eight major and their sub activities men farmers have high involvement in activities of drying (mean score 3.2), sorting, grading, packing, storage, bagging and weighing, repair of field channels, and bund farming (mean score 3.0), irrigation and plant protection (mean score 2.9) while women farmer have high involvement in activities of plucking (mean score 2.9), harvesting, storage (mean score 2.8), top dressing, drying, sorting (mean score 2.7). The activities in which women are involved are more monotonous, drudgery prone, manual and backbreaking.

In vegetable farming system, extent of gender involvement shows that there are distinct differences with women farmers spending most of their time in activities of plucking (mean score 3.65), harvesting (mean score 3.35), weeding (mean score 3.26), hoeing (mean score 3.00),

**Table 4: Gender analysis of hours spent daily in productive work**

Farming Sys.	Men		Women	
	Field work	Animal Husbandry	Field work	Animal Husbandry
<i>Wheat-Cotton</i>				
Mean	8.5	0.78	6.30	3.46
Std. Dev.	3.04	1.07	2.87	1.21
<i>Vegetable</i>				
Mean	7.00	0.73	7.35	3.33
Std. Dev.	4.81	0.93	3.27	0.92
<i>Dairy</i>				
Mean	3.30	8.78	6.23	3.42
Std. Dev.	2.27	1.58	2.57	1.72

**Table 5: Gender analysis of hours spent daily in reproductive work**

Farming System	Men			Women		
	House-hold work	Entertainment	Sleep	House-hold work	Entertainment	Sleep
<i>Wheat-Cotton</i>						
Mean	0.0	1.30	9.75	4.08	0.79	7.42
Std. Dev.	0.0	1.15	2.10	1.01	0.78	1.75
<i>Vegetable</i>						
Mean	0.32	1.59	8.85	3.84	0.47	7.68
Std. Dev.	0.37	0.75	0.92	0.92	0.82	1.07
<i>Dairy</i>						
Mean	0.0	1.43	8.21	4.32	0.53	8.00
Std. Dev.	0.0	0.48	0.58	0.86	0.70	1.54

transplanting (mean score 2.9) , bagging and weighing (mean score 2.87) while men are involved in a much larger number of activities and have high involvement in operations of irrigation (mean score 3.72), harvesting (mean score 3.60), packing (mean score 3.50) and repair of field channels (mean score 3.40). Men are involved in physical work while women work more with hands and use the head for carrying head load. On technology front it was found that on the whole women farmers hardly use any technology in operations involved except simple

hand tools while majority men make use of tractors for multipurpose use viz. ploughing, clod breaking, sowing, transportation and marketing along with use of harrow disc, sprayer, certified seeds and rhizobium inoculation. There exists a gender work and technology struggle and the solution lies in the empowerment of women through training and capacity building as the era of ‘science and technology’ knowledge, skill and expertise should count more than physical power.

**Table 6: Involvement in different farming operations by gender in wheat and cotton and vegetable farming**

Activity / Operation	Wheat-Cotton (MS)		Vegetable (MS)	
	Men	Women	Men	Women
<b>1. Seed Bed Preparation</b>				
Ploughing	2.2	1.0	1.97	1.00
Harrowing	2.1	1.0	2.72	1.00
Clod breaking	2.7	1.1	2.29	1.05
Removal of trash	2.6	1.2	2.05	1.22
Bund forming	3.0	1.3	2.51	1.40
Irrigation	2.9	1.2	3.72	1.07
Manuring	1.7	1.2	1.97	1.07
Mulching	2.2	1.1	2.15	1.07
Plant protection	2.9	1.2	2.57	1.12
<b>2. Sowing and Transplanting</b>				
Seed preparation	2.8	1.4	1.96	1.11
Sowing/drilling	2.5	1.0	2.40	1.09
Nursery raising	1.0	1.0	2.10	1.87
Transplanting	1.0	1.0	2.75	2.90
Gap filling/thinning	1.3	1.0	3.00	2.35
Intercropping	1.1	1.0	2.40	2.07
<b>3. Inter culture</b>				
Weeding	2.2	2.5	2.06	3.26
Hoeing	2.0	2.1	2.35	3.00
Top dressing	2.5	2.7	2.27	1.90
Plant protection	2.9	1.3	2.87	1.07
<b>4. Water management</b>				
i) Irrigation	2.8	1.2	2.84	1.30
ii) Repair of field channels	3.0	1.2	3.40	1.20
<b>5. Harvesting and Threshing</b>				
Harvesting	2.0	2.8	3.60	3.35
Plucking	2.1	2.9	2.70	3.65
Threshing	2.1	1.7	-	-
Winnowing	2.0	2.1	-	-
Bagging and weighing	3.0	2.4	3.30	2.87
<b>6. Transportation</b>				
Conveyance from field to house	1.7	1.2	1.97	1.89
<b>7. Processing</b>				
Drying	3.2	2.7	-	-
Sorting	3.0	2.7	3.40	2.65
Grading	3.0	2.6	2.90	2.65
Packing	3.0	2.6	3.50	2.27
Storage	3.0	2.8	3.20	2.87
Processing	1.0	1.0	1.00	1.00
<b>8. Marketing</b>				
	2.3	1.0	2.24	1.56

In dairy farming, with reference to Table 7 it is noted that majority of women farmers (90%) were cleaning the shed and utensils (65%). Milking was done manually and involvement of men was 32.5% while 72.5% women were involved. For cleaning of animals 37.5 % men always did this compared with 10% women. Men alone did sale of milk while women were not involved in this operation where money was obtained. For feeding activity majority of women farmers (55%) were manually always preparing feed. Feeding was done both by males and females. Majority of female farmers (52.5%) were always going for grazing. Purchasing of feed was a male activity and majority (42.5%) of male farmers were always procuring feed using tractor whereas majority of female farmers carried this as a head load. Most of the men farmers were involved for taking animals for insemination and treatment/vaccination. Both manual and artificial method of insemination was common and only men were involved.

**Differential Gender Wage Rates:** Women were found to be major carrier of water, fuel and fodder. They carried heavy head load but received no remuneration for the same as this is considered as extension of their household duty. Wage rate per day on basis of activities, in wheat cotton farming system as depicted in Table 8 shows that both men and women farmers were paid differential wage on basis of operation and hours spent. They were both involved in operations of weeding, harvesting, cotton picking, plucking cotton balls and threshing while the wage paid was same for cotton picking and plucking (Rs.10/5 kg and Rs.50), the wage rate was different in other operations with women farmers being paid nearly 2/3<sup>rd</sup> wage as paid to men counterparts with maximum wage rate of Rs.100 for threshing for men and Rs.80 for women farmers. Further, women were not employed in operation of ploughing, manuring and spraying regarded as male jobs while men were paid a wage

**Table 7: Extent of gender involvement in dairy activities**

Activity/Operation	Tool	Men		Women	
		Always	Seldom	Always	Seldom
<i>Cleaning &amp; Milking</i>					
Cleaning cattle shed	Hand	10(25.0)	-	36(90.0)	-
	Stick	10(25.0)	7(17.5)	36(90.0)	-
Cleaning utensils	Manual	11(27.5)	-	26(65.0)	-
Milking	Manual	15(37.5)	8(20.0)	13(32.5)	9(18.0)
Cleaning of animals	Manual	15(37.5)	7(14.0)	4(10.0)	-
Sale of milk	Manual	16(40.0)	-	-	-
	Farm gate sale	15(37.5)	3(7.5)	-	-
<i>Feeding</i>					
Preparation of feed	Manual	5(12.5)	16(40.0)	22(55.0)	2(5.0)
	Mechanical	15(37.5)	10(25.0)	6(15.0)	14(35.0)
Feeding	Manual	16(40.0)	9(22.5)	19(47.5)	5(12.5)
Fodder collection	Manual	19(47.5)	8(20.0)	14(35.0)	7(17.5)
Grazing control	Manual	4(10.0)	7(17.5)	21(52.5)	3(7.5)
Purchase of feed	Buy	23(57.5)	1(2.5)	-	-
	Home Delivery	7(17.5)	-	1(2.5)	2(5.0)
Procurement of feed	Head load	-	3(7.5)	14(35.0)	10(35.0)
	Tractor	17(42.5)	7(17.5)	-	13(32.5)
	Cart load	4(10.0)	10(15.5)	-	15(37.5)
	Cycle	6(15.0)	3(7.5)	-	-
<i>Insemination and Treatment (Occasional)</i>					
Natural	87.5	2.5	10.0	10.0	100.0
Artificial	-	33(82.5)	7 (17.5)	17.5	100.0
Taking for treatment// Vaccination	36(90.0)	-	10.0	10.0	100.0

**Table 8: Differential wage rates for gender in wheat and cotton farming**

S.No.	Operations	Men		Women		Wage in kind
		Av. work (hours)	Wage (Rs.)	Av. work (hours)	Wage (Rs.)	
1.	Ploughing	10	80	-	-	-
2.	Weeding	10	70	10	50	-
3.	Manuring	9	100	-	-	-
4.	Spraying	10	150 or 60Rs./acre	-	-	-
5.	Harvesting	12	100	12	80	2.5qu/ or Rs.400 /acre
6.	Cotton Picking	10	10Rs./ 5Kg	10	10Rs./ 5Kg	-
7.	Plucking of cotton bolls	10	50	10	50	1/3 <sup>rd</sup> part
8.	Threshing Winnowing+ Bagging	10	100	10	80 or 15 Rs./hrs.	-

rate of Rs.150 for spraying or Rs.60 per acre, a rate of Rs.100 for manuring and Rs.80 for ploughing and Rs.50 for weeding.

In vegetable farming from Table 9 it is clear that the wage rate varied from Rs. 35 for plucking activity to Rs. 100 for ploughing mainly depending on the physical labour involved. The amount of time spent per day varied between 5 to 10 hours . Women were largely involved in weeding, harvesting and plucking and received 2/3 rd wage rate compared with men counterparts. In dairy farming generally large farmers had employed outside labour (mainly from Bihar) and

the wage rate varied between Rs. 8000 to Rs. 12, 000 per month. Labour was also provided accommodation and in few cases food too. The differential wage rate in all the farming systems is a pointer towards the subordinate position of women workers who do not have bargaining power. Focused group discussion revealed that the women did not bargain but accepted the prevalent gender differentiated wage rate as they feared they would even loose the employment they enjoy which is essential for the survival of the family. They informed that they are bound by strong family values in which women's

**Table 9: Differential wage rates for gender in vegetable farming**

S.No.	Operations	Men		Women		Wage in kind
		Av. work (hours)	Wage (Rs.)	Av. work (hours)	Wage (Rs.)	
1.	Ploughing	10	100	-	-	-
2.	Weeding	10	60	10	40	-
3.	Transplanting/Nursery raising	-	-	-	-	-
4.	Manuring	9	100	-	-	-
5.	Spraying	10	100 or Rs. 60/acre or Rs.8/drum	-	-	-
6.	Harvesting	10	100	10	80	1.20 qu./ or Rs.400 /acre
7.	Plucking of vegetables	6	35	6	35	-
8.	Selling of vegetables	8	50	-	-	-
9.	Bagging	5	40	-	-	-

education, mobility and freedom are restricted while women work more and earn less, experience more physical and emotional assault than they should.

From the above tables 1 to 9 the gender differentials in a predominately agricultural state of Haryana are mapped out. The empirical information substantiates the gender differentials including work and wage differentials and subordinate lower status accorded to women's work and related operations. The low social status of women in this region gets reflected in the low and sex declining ratio in this economically progressive agrarian state. This needs to be viewed along with other developmental indicators as high female mortality rate, female foeticide, bride burning, dowry, violence against women that also indicate the gender inequality. It is evident that as women have less control on productive resources and have limited skills they exercise less power than men. They face particular cultural and social obstacles that limit their thinking and questioning while sharing dual burden of their productive and reproductive roles and responsibilities. There exists a gender imbalance and gender power play to the determinant of women in Haryana, and the solution lies in their empowerment on agriculture and household fronts so that they realize their full potential and become equal partners in faster development.

### CONCLUSION

The paper through the process of mapping out gender comparison in three farming systems in Haryana viz. wheat-cotton, vegetable and dairy brings to light the gender dynamics with respect

to profile, daily time spent in different operations, involvement in various activities and wage differentials. The gender discrimination is evident with women getting more share of work and less wage where ever paid while family labour is taken for granted. Women undertake more multiple tasks, with little technological support and have a longer working day. Though women have access to resources but it is largely the men farmers who exercise control and handle finances. These differences are pointer to the subordinate position of women in the agrarian economy of Haryana.

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