

Some Aspects of Labour Use in Punjab Agriculture.

A Study of Ferozepur District 1967-68, 1968-69

and 1969-70.

Submitted for Partial Fulfilment of the Degree

of Master of Philosophy.

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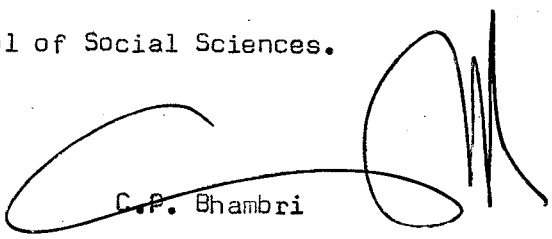
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I certify that the dissertation entitled "Some Aspects of Labour Use in Punjab Agriculture: A Study of Ferozepur District 1967-68, 1968-69, 1969-70" submitted by Pritam Singh in fulfilment of <sup>nine</sup>~~ten~~ credits out of the total requirements of twenty four credits for the degree of the Master of Philosophy of the University, is a bonafide and original work to the best of my knowledge and may be placed before the examiners for their consideration.

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## P R E F A C E

'Agrarians' representing one of the more developed schools of economic thought devoted to studies of peasant economies, considered population problem to be the key problem of peasant economies.<sup>1</sup> Various dual economy models of economic development of under developed countries (Lewis's<sup>2</sup>, Ranis - Fei's<sup>3</sup> being the most well-developed and formalised) start with a basic premise about the existence of surplus labour or disguised or overt unemployment of labour force in the rural sector. And those who dispute the existence of such surplus labour, end up by proclaiming the allocation of resources in the traditional peasant economy 'efficient'<sup>4</sup>. The analytical framework of both kinds of approaches is, however, based, explicitly or implicitly, on premises of conventional economic theory in terms of competitive markets and marginalist assumptions. As a result, the specificities of rural labour markets in economies experiencing transition are obscured. Before answering whether there is any surplus labour or not, the question as to what constitutes the 'labour force' has to be settled because of its wide-rangind implications from the viewpoint of understanding the structure and the process of change in a rural economy. An individual cannot be characterised as a 'part of the labour force

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1. Alexander Tschanjanon, Quoted by N. Georgescu - Reogen, "Economic Theory and Agrarian Economics", Oxford Economic Papers, Feb. 1960 reprinted in Tara Shukla (ed.) Economics of Underdeveloped Agriculture Vora & Co. Publisher Pvt. Ltd. Bombay, 1969, P. 332.
  2. W.A. Lewis, "Economic Development with Unlimited Supplies of Labour", Manchester School, Vol. 22, 1954. 'Unlimited Labour: Further Notes', Manchester School, Vol. 26, 1958.
  3. J.H.C. Fei and G. Ranis, Development of Labour Surplus Economy: Theory and Policy, Irwin, 1964.
  4. Theodore Schultz, Transforming Traditional Agriculture, Yale University Press, New Haven, 1964.

without understanding the web of socio-economic relations which involve him/her. The understanding of the determinants that go to decide whether a person will opt for off-household work, what kind of work and under what conditions, is absolutely essential for any meaningful analysis. Mere aggregative estimates of people 'employed' and 'unemployed' defined in whatever way, are bound to gloss over the essential heterogeneous character of the labour force and thus provide either under-estimation or over-estimation of employment in a distorted fashion.

The purpose of this study, however, is not to make quantitative estimates of the components of rural labour force in Punjab. It is, on the other hand, an attempt to point out certain qualitative peculiarities of the rural labour force and the pattern of use of different components of this labour force by different sections of the peasantry in Punjab. Keeping in mind the structure of a rural society where commercialisation has still to vanquish the powerful citadels of tradition totally, the social force exercised by religion, caste, clan and tribe influencing the pattern of labour utilisation is given due consideration.

In Chapter 1, we take a broad view of the peculiarities that characterise the pattern of labour use in Punjab's rural economy. With a view to showing how particular caste-ethnic characteristics and religious-cultural traditions of a rural population affect its patterns of and attitudes to work, we specially emphasise the role of Jat Sikh community, the main cultivating caste in Punjab, in generating certain

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5. This was the central theme of the criticism made by Experts Committee on Unemployment Estimates, of the methodology and estimates made in earlier Plan documents. 'Report of the Committee of Experts on Unemployment Estimates', (Dantwala Committee) Planning Commission, Govt. of India, 1970.

norms about work participation. This fact is very important from the viewpoint of understanding the process of historical development of Punjab agriculture. How women, children and old men participate in agricultural work, is attempted to be shown within the framework of the above mentioned historical-cultural forces. The over all structure within which this question is discussed, however, always remains the historically evolved social relations of production. This becomes especially more clear when we go on to discuss the characteristics of labour hired in different ways. The question of hired female and child labour is brought in within this context.

Having thus outlined the over all broad characteristics of labour utilised in Punjab agriculture, we move on to Chapter 2 with the objectives of analysing the empirical situation in terms of concrete data. Empirical results thrown up by an analysis of the data, are utilised to render our observations more concrete. In this chapter we focus especially on the relationship revealed between output per hectare and the size of holding which in the literature has been closely associated with the different availability and utilisation of labour on different sized holdings. We have, however, found no such systematic relationship and attempted to relate this phenomenon to pattern of labour utilisation vis-a-vis the technological developments that seem to have taken place in Punjab agriculture. But we would like to mention here that we have not gone into the question of impact of mechanisation on pattern of labour use since there already exist a number of good studies on the subject. In Chapter 3, we draw upon the discussion carried on in these two chapters, to pose the problems faced by economic theory in analysing the role of labour in a rural

economy. A preliminary attempt is made at critical examination of the use of categories—family labour, hired labour—made in the Marxist debate on the mode of production in Indian agriculture and the marginalist theory of efficient resource allocation. Chapter 4 Part I is devoted to summing up the preceding discussions and conclusions arrived at and Part II throws up certain questions which could not be dealt sufficiently here and which we indicate as possible lines on which further research may be pursued.

## CHAPTER - 1

### GENERAL CHARACTERISTICS OF LABOUR USE IN PUNJAB AGRICULTURE

The treatment of the subject-matter, here, is not in terms of historical analysis of the changes taking place in the pattern of labour utilization in Punjab agriculture. It is more confined, temporally, to an account of the contemporary period of late sixties and early seventies and spatially to the South Western districts - Ferozepur and Faridkot - of Punjab. The observations in this chapter are not made on the basis of a direct household to household enquiry. We have employed the method of supplementing our direct and indirect evidence<sup>1</sup> acquired through personal observations on the subject-matter with other studies on earlier periods and pertaining to other regions - within and outside Punjab - wherever contextually relevant. This chapter, in other words, is a prelude to a mere

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1. Due to pure biographical factors, we had the advantage of close acquaintance with a large number of farming families of more than a score of villages spread in the two districts- Ferozepur and Faridkot (which was carved out, by combining the Faridkot Tehsil of Bhatinda district and Moga and Mukatsar Tehsils of Ferozepur district) of the Malwa region in Punjab. (List of such villages is given in Appendix 1). Interviews with members of a few families of this group, were extremely useful. We could make use of our acquaintances to discover certain forms of verbal and written contracts pertaining to hiring of permanent labour which are generally inaccessible to a stranger outside or formally appointed field investigator.

concrete examination of a specific data attempted in Chapter 2.

Availability of published/unpublished data was the determining factor in choosing the particular region for study through our own familiarity with the region was an additional factor. Therefore, when we make certain statements pertaining to the whole of Punjab it should be kept in mind that it more exactly refers to the conditions prevailing in the region under study and are generalized therefrom.

#### 1.1 Types of labour used in Punjab agriculture:

As in any transitional agriculture which neither consists of pure family labour dependent peasant farms<sup>2</sup> nor of pure wage-labour based capitalist farms<sup>3</sup>, Punjab agriculture is characterized by the participation of both forms of labour, i.e. family labour and hired labour though the proportion in which they are combined, may vary from farm to farm. Let us discuss the characteristics of family labour, first.

#### 1.2 Family labour:

The size of a farmer's family can at best be considered as potential labour force, the mode and extent of whose

2. Chayanov's theory of the peasant economy, was based on such a conception of the peasant-farm. "The term 'family farm' means a farm normally run by a family without hired outside wage-labour". Daniel Thorner in Preface to A.V. Chayanov, The Theory of Peasant Economy (ed.) by D. Thorner et al, American Economic Association, Illinois, 1966, P. VI.
3. Though never fully worked out, Marx's concept of capitalist agriculture - a view reflected from his various writings - implied such a system. "In the sphere of agriculture, modern industry has a more revolutionary effect than elsewhere.....it annihilates the peasant,.....and replaces him by the wage-labourer", Capital Vol.I, Moscow, 1974, p. 474.

utilization is determined by the economic status of the family and the historically-determined social customs prevailing in the region. A farmer's family consists of men, women of different age-groups and children. A family member below the age of 14 may be normally considered as a child and above that as an adult. The demarcation line - in terms of age - to characterize a person as a grown-up member is difficult to draw and varies from region to region and from farm to farm.

Division of labour within the family is determined by the nature of the work demanded - the most strenuous tasks being taken up by the adult males and relatively less difficult ones by adult females, children and old people. Old men and women generally do not participate in operations connected with crop production. They act mainly as careful watchmen of the family and as a source of entertainment to the very small children of the family. Their help in rearing up children is of considerable importance as it frees the time of the female members for other domestic work. Some old men and women by performing certain semi-skilled operations render a help to the household economy of a peasant cultivator like, e.g., old men making ropes and old women spinning the Charkha. The increasing penetration of commercialization in agriculture is taking away the importance of such household semi-skilled work. Some old men render a considerable help to the peasant household economy in the maintenance of cattle stock. It is very rare that old men and women become complete burden on the peasant household economy,

without contributing their share to it, howsoever marginal it may be. The age till which the old people in the family participate in farm work is function of the resource position of the cultivating household. In small-sized farms with low resource position people participate in work till late in life whereas in relatively prosperous households, the retirement from work is relatively earlier.

Of the most crucial importance to the peasant household economy is, however, the labour of a male adult. The agricultural operations which a family male adult may perform, is largely determined by social traditions associated with certain castes and tribes. Jat Sikhs are the predominating cultivating caste in Punjab. There is hardly any agricultural operation which a Jat Sikh cultivator hesitates to do.<sup>4</sup> Though

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4. "Unlike some dominating land-owning castes in North India, most notably the Rajputs, Jats take great pride in working with their lands. There are no agricultural tasks that a Jat will not do himself. The value placed on agriculture by the owner cultivators, who are also the dominant element in rural society, is an important factor in the history of agricultural development in the Punjab'. (Emphasis ours) - Tom G. Kessinger, Vilayatpur: 1848-1968: Social and Economic Change in a North Indian Village, University of California Press, Berkeley 1974, p. 103. Malcolm Darling one of the pioneers in the studies on Punjab peasantry, has also laudatory comments to make about the Jat cultivators. "No tribe is in stronger contrast to the Rajput than the Jat. If the former represents the gentry of the province, the latter is the very marrow and soul of the peasantry...Jat is the ideal cultivator.....Ploughing, weeding or reaping, he will bear the burden and the heat of the day, and at night take his turn at the well.....it would be difficult in any country to find a more remarkable combination of cultivator, colonist, emigrant and soldier. Educated and organized, and relieved of the handicaps imposed upon him by custom and debt, he might well become the foundation of a new rural civilization in the Punjab'. - M.L. Darling, "The Punjab Peasant in Prosperity and Debt", Oxford University Press, 1925, p. 38, 40.



Darling points out the similarities in the character traits of a Jat belonging to different religions<sup>5</sup>, we tend to believe that non-association of any agricultural operation in Punjab with a particular caste is a phenomenon which shows the deep impact of strong anti-caste traditions of classical Sikhism - by which we mean the writings of Sikh Gurus.<sup>6</sup> In contrast stands the impact of caste considerations on Rajput, another minority cultivating caste in Punjab, mainly concentrated in a few tehsils of Hoshiarpur district in the Doaba region.<sup>7</sup> No doubt, due to considerations purely of economic status, certain male adult members of very rich peasant families do not participate in certain operations involving hard manual labour. It is a common sight in Punjab countryside these days, that young educated sons of very rich peasant families, participate in all agricultural operations involving the use of tractor and machinery but would refrain from operations involving painstaking physical labour. But this phenomenon, however, represents the new

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5. 'He (the Jat) may be either Hindu, Muhammadan or Sikh; and to some extent his characteristics vary accordingly.----- All three, however, have a tenacity of character and skill in farming which make them the best cultivators in India', Darling, op. cit. p. 38.
6. "Under the Guru's instruction abandon caste. Acquire the excellent colour of tambal" (emphasis ours) - Guru Arajan Dev quoted by Clinton, H. Loehlin, "The Granth of Guru Gobind Singh and Khalsa Brotherhood". Lucknow Publishing House, Lucknow, 1971, p. 13.
7. A pure Rajput, "to preserve his name and honour unsullied, must scrupulously observe four fundamental 'maxims", the first of which is "He must never drive the plough", (Kangra Gazetteer) quoted by Darling, op. cit. p. 36.

preference schedules for work among the prosperous sections of the peasantry and has nothing to do with caste considerations. If we leave aside this relatively new trend, male adult members of Jat Sikh community participate in all agricultural operations like preparatory till-age, sowing, manuring, interculture, irrigation, harvesting and threshing etc.

1.3 Female adult members:

The question of family female labour employment on farm work is more closely associated with caste-ethnic divisions in society and their corresponding cultural norms about women's work than that of male adult employment. Punjab, along with West Bengal is one of the Indian States with very low work participation rate among women. (See Table 1.1) This trend is corroborated by other studies.<sup>8</sup> Though the Punjabi Jat Sikh women are more liberated than the Muslim and Rajput women<sup>9</sup>, the influence of Muslim culture with respect to attitude towards women's work, on North India is perceived by Boserup<sup>10</sup> to be more pervading than on South India. Punjab had been historically

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8. R.C. Chandna, "Female Working Force of Rural Punjab-1961", Man-Power Journal, Jan-Mar., 1967, p. 47-62; Kamla Nath, "Female work Participation and Economic Development - A Regional Analysis", Economic and Political Weekly (EPW) May 23, 1970. D.R. Gadgil, "Women in the Working Force in India". Asia Publishing House, New York, 1965, p. 13. Victor S. D'Souza, "Changing Socio-Economic Conditions and Employment of Women in India 1871-1961", Transactions of the Indian Institute of Advanced Study, Vol.VII, Simla, 1969.

9. ".....if the Rajput wife is an economic burden, the Jatni (the wife of a Jat - PS) is an economic treasure", Darling, op. cit., p. 38.

10. Easter Boserup, Women's Role in Economic Development, George Allen and Unwin Ltd., London, 1970, p. 72.

TABLE - 1.1

The Trend in Participation Rates (percentages) 1911, 1951,  
and 1961 (females only)

State.	1911	1951	1961
Andhra Pradesh	41.6	21.2	41.3
Assam	39.0	30.7	31.8
Bihar	34.7	20.7	27.1
Gujarat	30.0	28.0	27.9
Jammu & Kashmir	33.7	N.A.	25.6
Kerala	28.0	18.1	19.7
Madhya Pradesh	47.9	37.9	44.0
Madras	36.5	12.7	31.3
Maharashtra	39.8	33.3	38.1
Orissa	30.4	18.8	26.6
Rajasthan	45.4	38.3	35.9
Uttar Pradesh	33.3	33.6	18.1
West Bengal	18.8	11.6	9.4
Mysore	25.3	18.1	32.0
Punjab	11.9	17.2	14.2
India	33.9	23.3	28.0

Source: Report of the Committee of Experts on Unemployment Estimates, Planning Commission, Government of India, 1970, p. 197.

the opening gate to all outside invaders in India. In such periods of turmoil and uncertainty severe restrictions on the mobility of women - considered to be the weaker sex - were a natural outcome.<sup>11</sup> Similarly, very low levels of work participation rate of women in two districts of Punjab namely Kapurthala and Patiala - which had been under princely rule - are attributable to the powerful influence of feudal culture which worked against greater freedom and exposure of women to outside work.<sup>12</sup> The practice of keeping women indoors seems to have ossified itself into a strong prejudice against female labour work outside on the farm. Moreover, relationship between the relative prosperity of the Punjabi peasantry and the low level of work participation rate by Punjabi women, seems to confirm the generally observed negative correlation between economic development and the work participation rate among women in developing countries.<sup>13</sup>

But the kind of agricultural operations in which

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11. Chandna, op. cit.

12. ibid.

13. Boserup, Nath, Chandna (op. cit). In an interesting study of a village in Andhra Pradesh, Dube found four main social groups in the village. In the top group of high-caste people, women took no part in any outdoor activities and many observed pardah. Below this top group was the local cultivator caste. Their women were occupied mainly with domestic duties and never earned money for the support of the family. In the third group of ordinary low-caste people, women assisted their men-folk on their family farm and very rarely hired out themselves. The fourth and the lowest social group was composed of women belonging to the poorest of the low castes who were expected regularly to seek paid work for the support of their families. S.C. Dube, Indian Village, London, 1956, p. 174-5.

the Punjabi rural women had been participating seems to have changed very little over time in the past one century. There is no evidence that Punjabi women ever participated in operations like ploughing, harvesting and irrigation. Tom Kessinger, in an attempt to reconstruct the pattern of economic activity in a Punjabi village in 1848 explains the role of female labour as below:

"The processing of produce was largely women's work. With the exception of threshing and sugar manufacture that could not be done in the house for lack of space, processing of agricultural products was carried out by women in their courtyards. The processing included the shelling of maize, carding and spinning of cotton, grinding of wheat and making of various milk products, particularly ghee".<sup>14</sup>

Darling, describing the practice in the first two decades of the twentieth century, says: "She, (i.e. Jat's wife) does not plough, dig or drive a cart, but there is no other form of agricultural labour which she does not practice and ordinarily adorn.-----Jat's wife not only brought her husband his food in the fields, but helped him to sow and to weed to pick the cotton and feed the cattle."<sup>15</sup>

But noting the change as a result of growing prosperity, especially in the canal colonies, Darling says "In the

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14. op. cit. p. 54

15. op. cit. p. 38-39.

old days they (i.e. rural women) had both to spin and to grind for the whole family, and in addition to cook, take the menfolk their meals in the field, sweep out house and byre, chop up the fodder and feed the cattle, as well as look after the children. Now the grinding is largely done by bullock, if not by engine, and what was women's chief task falls indirectly upon the man. As the machine-made cloth comes in, the spinning-wheel goes out."<sup>16</sup>

Though operations like threshing and processing of products, grinding of wheat and chopping up the fodder by women have almost completely vanished as a result of mechanization of these operations, female participation in other operations like picking cotton, plucking maize cobs and millet earheads, harvesting groundnut and stripping sugarcane before crushing, preparing seed (such as stripping sugarcane and preparation of cuttings), groundnut shelling, the pre-sowing treatment of cotton, paddy and other seeds and later assisting men in sowing - is still quite prevalent, though to varying degrees, in different parts of the state.<sup>17</sup> But the pattern of participation by women belonging to families of different economic status will not be uniform, e.g. women of rich peasant families will hardly participate in any farm activity. On the other hand, women belonging to poor peasant families, do perform all kinds of

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16.op. cit. p. 166

17.Martin H. Billings and Arjan Singh, "Mechanisation and the Wheat Revolution: Effects on Female Labour in Punjab", EPW, Dec. 1970.

operations except irrigation, harvesting and ploughing.<sup>18</sup> In the the villages with economically prosperous peasantry and of cultural advancement where e.g. even girls go to schools and higher college and university education, the employment of family females on any kind of farm work is completely absent.<sup>19</sup> Correlation between economic prosperity and low level of family female participation on farm work seemed to exist in the villages of Ferozepur and Faridkot districts.

#### 1.4 Family Child Labour:

The rate of family child labour participation in farm work is a function of the literacy rate among the children e.g. work participation rate for children in Kerala tends to be very low because of the high rate of school enrolment.<sup>20</sup> Though

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18. There was a peculiar case of two peasant households in village Dhindsa of Ferozepur district, who employed all their young girls on all kinds of agricultural operations except ploughing. But there were some significant differences explaining the cause. The first peasant, owning about 12 acres of good fertile land, had four daughters (between the age of 9 to 17) and one son (about 7 years old. Though his wife rarely worked on the farm, he himself was a hard-working enterprising peasant, made all his daughters work on the farm and was quite candid about it. He explained that he can marry them with good dowry if they all earned without letting him lose his money on hiring labour. He seemed to be a social rebel. The other peasant had five daughters (between the age of 18 to 35) and one married son (age about 30). The peasant was an opium-addict, his son also rarely worked and his wife was too old (about 50 years) to work. He had got married off only the eldest daughter and was keeping all others unmarried. He made his daughters work on all kinds of agricultural operations and was an obvious case of exploitation. But both the peasants were disliked by the rest of the village population (including agricultural labourers) and were considered greedy and immoral people though the motivations were entirely different in the two cases.

19. Such was the case observed in village Lakhewali in Mukatsar Tehsil of Faridkot district.

20. "The Report of the Committee of Experts on Unemployment Estimates - Dantwala Committee Report", op. cit. p. 20.

there does not seem to be any caste barrier among the Jat-Sikh cultivators against the employment of their child labour on farm work, it is considered to be a symbol of higher economic status not to employ their children on farm work. The most important operation in which family children do participate is maintenance of cattle. In the early morning, they take out the cattle for grazing in the fields. Such fields may be the common village land, the farmer's own land and other farmer's lands where seed is still not sown. By lunch time, the cattle are brought to the common village pond in order for the cattle to drink water and bathe. After letting the cattle rest for sometime in the afternoon, they are again taken out to the fields to be brought back home by evening. In some villages, groups of children of many families jointly take out their cattle to some far-off place from the village and bring them back only in the evening. With the spread of mechanization, more and more fallow land is being brought under cultivation and the practice of grazing cattle in the fields is dwindling away. With that the use of child labour for this particular operation is also vanishing. The traditional agriculture had more avenues of child labour employment. Children played an important role; from the daily chore of minding cattle to the more seasonal tasks of assisting their parents in planting, harvesting, threshing and manufacturing gur (crude sugar) and dropping wheat or maize seed in the furrow behind the plough.<sup>21</sup>

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21. Kessinger (op. cit. p. 54) describes such operations of child-labour participation in a village of Jullunder district in 1848.



Except in those regions and those farms where traditional technology is still prevalent, the displacement of child labour has taken place to a considerable level. Taking meals to their father, brothers or farm servants working in the fields, scaring animals and birds away from the crops and picking of cotton are a few of the agricultural operations where family child labour is still employed. As a result of increasing monetization in the rural economy of Punjab, maintenance of accounts is becoming a pressing necessity. School-going children of many families, with their knowledge in elementary arithmetic, render help in maintaining accounts. But, by and large family child labour employment is restricted to poor and middle peasant families. Mechanization, by making the use of human energy in a more systematic and regulated fashion, renders child labour redundant to a great extent. Displacement of child labour is a reflection of the general improvement in the material and cultural standards of life in any society.

#### 1.5 Exchange of and hiring out of family labour:

Since hiring out family labour for wages is taken to be an indicator of the distress economic condition of a cultivator, it is resisted to the last. Only the extreme conditions of immiserisation and helplessness, does a peasant hire out his labour and lease out his land, since both are a reflection on his social prestige. Exchange of family labour between farming families is, however, widely prevalent and takes diverse forms.<sup>22</sup> There may be a

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22. Whether exchange or hiring out of labour, the phenomenon is completely absent in the case of family females and children of Jat Sikh cultivators.

direct exchange of family members or a peasant may hire in bullock labour of another peasant and may pay him back in kind by offering his own labour. Exchange of labour between very small holdings having only one male adult earner becomes absolutely essential for certain operations. For example, making sections in the field by forming several earthen dams about six inches high, for conserving the water during irrigation, requires the simultaneous joint labour of at least two persons. A special mode of exchanging labour takes place during peak seasons like harvesting of wheat. A peasant may request his relatives and friends to help him out in harvesting his crop in an emergency situation.<sup>23</sup> The relatives and friends - each one of them - send one or two members of their family to harvest the crop of the needy person. They would, being a large group, will finish harvesting the crop in one or two days which otherwise would have taken weeks. Such guest labour is treated during the period of their stay, with the best delicacies and liquor a peasant can afford according to his economic status. No cash or kind payment takes place and the friends and relatives might ask at another time for similar kind of help from the now host peasant.

#### 1.6 Hired labour:

Since we keep our focus of observation on hired labour use on farm work in general and on crop production in particular, we do not go into the question of various other forms of labour

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23. This practice is called Mang (literal translation 'demand')

hired by cultivators which have existed historically.<sup>24</sup> Of all the other types of artisan labour hired in by a cultivating household, the carpenter's role was and is directly related to the economy of the cultivator. The carpenter, for his work in making and repairing some of the implements of the agriculturists, is given a share of the produce according to a sepidari system.<sup>25</sup> Before delineating the types of hired labour used on crop production, let

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24. Historically, division of labour within a rural economy had been closely associated with the caste divisions of the population which itself might have grown out of historically specific division of labour prevalent for a long historical period. The following table 1.2 shows the historically prevalent association of caste with a specific occupation: (see page 16)

Marx describes this division of labour in a very succinct fashion: "The constitution of these communities varies in different parts of India. In those of the simplest form, the land is tilled in common, and the produce divided among the members. At the same time, spinning and weaving are carried on in each family as subsidiary industries. Side by side with the masses thus occupied with one and the same work, we find the "chief inhabitant", who is judge, police, and tax-gatherer in one; the book-keeper; who keeps the accounts of the village and registers everything relating thereto; another official, who prosecutes criminals, protects strangers travelling through and escorts them to the next village; the boundary man, who guards the boundaries against neighbouring communities; the water-overseer who distributes the water from the common tanks for irrigation; the Brahmin who conducts the religious services; the school-master, who on the sand teaches the children rading and writing; the calender Brahmin, or astrologer, who makes known the lucky or unlucky days for seed-time and harvest, and for every other kind of agricultural work; a smith and a carpenter, who make and repair all the agricultural implements; the potter, who makes all the pottery of the village; the barber, the washerman, who washes clothes, the silversmith, here and there the poet, who in some communities replaces the silversmith, in others the schoolmaster." Capital, Vol. 1, op. cit., p. 337-39.

25. Sepidari system is a version of the Jajmani system prevalent in some other North Indian States. For a description of Sepidari system, see Kessinger, p. 56-57, 159-160; for the Jajmani system, see W.H. Wiser, The Hindu Jajmani System (Lucknow: Lucknow Publishing House, 1958).

TABLE - 1.2

<u>Caste</u>	<u>Occupation</u>
1. Chamar	Leatherworker
2. Julaha	Weaver
3. Tarkhan	Carpenter
4. Chiir	Water carrier
5. Nai	Barber
6. Kumhar	Potter
7. Chuhra	Sweeper
8. Gujjar	Herdsman
9. Rangeez	Dyer
10. Luhar	Blacksmith
11. Mirasi	Drummer
12. Sonihar	Goldsmith
13. Lakarhara	Woodcutter
14. Kasai	Flayer of dead cattle or butcher
15. Sheemba	Tailor

Source: 1. Khanna Shumari (Household census), 1848 Village Vilayatpur.

2. H.A. Rose, A Glossary of the Tribes and Castes of the Punjab and North-West Frontier Province (Patiala: Language Department, Punjab, 1970, a reprint of 1911-1919 ed.) Both quoted by Kessinger, op. cit. p.55, 9.

NOTE: The entries made above in the Nos. 10, 13 & 14, 15 are our own, in addition to the ones quoted by Kessinger.

us see what are the sources of hired labour in Punjab.

1.7 Sources of hired labour:

The following sources providing hired labour can be identified.<sup>26</sup>

1. Landless families permanently residing in the village with labour as the main source of livelihood. Such families generally live together in a cluster of houses, separately from the locality of the cultivating households. Mazhbi Sikhs and Harijans are the main castes of such landless labour.
2. Emigrant labour belonging to nomadic tribes.
3. Landless families residing in the neighbouring villages.
4. Village artisans and other menials finding labour as a lucrative employment during the peak harvesting season.<sup>27</sup>

from  
C.A.W.P.

1.8 Types of hired labour:

Hired labour used by farming households on crop production may be broadly divided into two categories:

- (a) Casual labour;

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26. Studies in the Economics of Farm Management, Punjab (1954-55), p.18.

27. A.C. Sharma in a three year study (1958-59, 59-60, 60-61) of 101 holdings in Bhatinda block of Bhatinda district, found that 80 percent of the sample farmers were utilizing the source No. (1) for meeting their requirements of hired labour and 53.5 of the farmers depended upon nomadic tribal labour for meeting their needs. A.C. Sharma, "Employment and Wage Structure of Farm Labour in Punjab", Man-Power Journal, Jan-March 1967. Bauria tribe is the predominant tribe among the emigrant labour. In some villages families of this tribe had been staying for generations. In village Pyareana of Ferozepur Tehsil, families of the Bauria tribe constitute more than 50% of the total settled population of the village.

(b) Permanent labour.<sup>28</sup>

The conditions of employment of casual and permanent labour differ not only in terms of duration of employment but also in terms of rate of payment, mode of payment, freedom to seek alternative work, existence of a written or oral contract and the security of employment. We will, now discuss the characteristics of these two types of hired labour.

1.9 Casual labour:

Casual labour is employed in response to excess demand for labour in any peak season like transplanting of paddy, weeding harvesting, cotton-picking, stripping of sugarcane, plucking maize cobs and millet earheads and harvesting. Certain operations like

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28. We prefer to use the term permanent labour instead of 'attached labour' since the later concept has a connotation of bondedness while permanent labour merely refers to a period of employment without any implication about bondedness. For a trenchant critique of Agricultural Labour Enquiry's method of use of the concepts 'attached' and 'casual' labour, see Daniel Thorner and Alice Thorner, "The Agricultural Labour Enquiry: Reflections on Concepts and Methods", The Economic Weekly, Special No. 1956, reprinted in Thorner's Land and Labour in India, Asia Publishing House, Bombay, 1974. Though Thorner had objections even to the use of 'permanent - casual' terminology and preferred the distinction 'free-unfree' labour, we feel peculiarities of hired labour employment in Punjab, can be brought out only if we retain the distinction 'permanent-casual' labour as will be clear from the following discussion. However, a point of caution is necessary here. From the viewpoint of hired labourer, the characterization 'casual' and 'permanent' has a purely transitional significance. A labourer who is 'casual' this year might be 'permanent' next year and vice-versa. It is only the conjunctural circumstances that determine the particular form of employment a hired labourer seeks. Thorner's discussion of employer-labourer relationship was, however, very useful to us for analytical purpose. D. Thorner and A. Thorner, "Employer-Labour Relationships in Agriculture", Indian Journal of Agricultural Economics, April-June 1957, reprinted in Land and Labour, Loc. ct.

cotton-picking, stripping of sugarcane, plucking maize-cobs and millet earheads are more specifically female-labour operations. Female labour hired to pick cotton, is, therefore, specifically designated as Choni. Male adult labour casually employed is called diharia. Casual labour is generally paid in cash and earns higher daily-wage rate than permanent labour.<sup>29</sup> Female labour employed for picking cotton is either paid in cash or in kind according to a share in the produce depending upon the different times of picking. The share of the Choni in the produce goes on increasing with successive pickings since the amount a Choni is able to pick goes on decreasing with each successive picking.<sup>30</sup> Hired female casual labour participates in all operations except ploughing, sowing and irrigation.<sup>31</sup> Female labour below the age of 14-15, if paid in cash, is paid half the wage rate for the male adult labour. Adult female labour is paid 3/4th of the wage-rate for the male adult. Child labour is hired for most of the operations except ploughing and sowing and is paid wages according to the age and the capacity for work of the hired child labour. It may vary from  $\frac{1}{2}$  to  $\frac{3}{4}$ th of

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29. Sharma's study of Bhatinda district (op. cit) also finds this pattern. See Appendix 5, 6, 7 for daily wage-rates of casual male adult labour in the years 1967-68, 1968-69 and 1969-70 according to FMS data.

30. Sharma's study found the share of produce varying from 1/20th to 1/8th from the first picking to the fourth and subsequent ones.

31. I found an exceptional case of a female labour in village Dhindsa, who was hiring out herself for irrigation also and was even willing to hire out for ploughing. But such an exception, as always, proves the rule.

the wages paid to male adult labour. Certain hired labour families take the work on piece-rate system for operations like transplanting of paddy, picking of cotton and harvesting wheat, gram or mustard. Different rates of payment for piece-rate work operate for different kinds of operations.

Hiring out labour on casual basis to that on permanent basis is preferred by the labourers because of the higher daily-wage rate they are able to get in the former system. But the necessity to have credit for meeting some emergency needs forces them to seek permanent contract. Though insecurity of employment in a lean period is also an additional factor pressing a labourer to seek permanent labour status, it is of secondary importance since the higher labour - requirements in the multiple-cropping system has reduced the severity of seasonal unemployment. This fact is borne out by a commonly observed practice among the agricultural labourers. In a particular year when a labourer does not have an eventuality like marriage, death or sickness in the family or like building a house, necessitating some lump-sum cash expenditure, he generally chooses to work as a casual labourer throughout the year. The higher earnings through casual labour employment compensate even unemployment for a few days, if any, in a lean season.

1.10 Permanent labour (child):

Hiring out labour on permanent contract basis is confined to only male adult and male child members of a labourer's family. The child labour hired on permanent basis is paid wages according to



his age and capacity for work. The following table 1.3 shows the different wage-rates paid and work expected from child labour of different age-groups in a village of Mukatsar Tehsil:

TABLE - 1.3

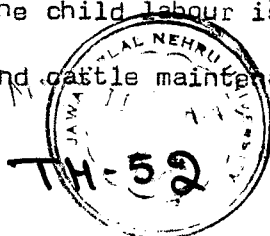
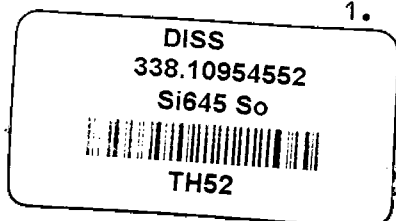
Rates of payment and nature of work expected from child labour of different age-groups year 1975.

No.	Age group of the child labour (years)	Nature of work expected:	Rate of payment:
1.	8 - 10	Cattle maintenance, assistance to family female members in household work and running errands.	1/4th of the annual wage rate of male adult earner.
2.	11 - 14	--do-- plus participation in weeding, harvesting & transplanting	1/2 of the -----
3.	15 - 17	All kinds of work except ploughing & sowing	3/4th of the -----

Source:- Personal interviews with family members of some employers and employees of village Baam (1975).

The annual wage-rate for a male adult labour in the concerned village in 1975 was Rs.1600-00. The child labour was also given three meals and two teas a day along with clothes and a pair of shoes once a year over and above the cash wages paid to him. A specimen copy of the written labour contract between the father of the hired child labour and the employer is appended in Appendix 2. Important features of the contract can be discerned as follows:

1. The child labour is being employed to do farm work and cattle maintenance.



2. If the boy leaves the work in the month of Vishakh-Jeth (i.e. mid April to mid June) or deliberately sits at home, amount equal to half the prevailing wage rate for a male adult labour will be deducted from his annual payment.
2. If he absents himself in other months, a rupee and a half per day will be deducted from his payment.
4. Rs.150-00 only are being taken as advance cash payment and the necessary promissory note has been written for the purpose.<sup>32</sup>
5. The remaining money will be taken at necessary occasions after Lohri (i.e. 13th of January).

The annual wage bill for the child being Rs.306.25, Rs.150-00 were taken as advance payment which amounts to the wage-bill for about half the period of contract (i.e. from 11.8.1973 till 13.1.1974). The next instalment of payment was to be given only after this initial period is completed. But nothing is mentioned about the terms of settlement in case any of the parties to the contract breaks if off. May be the employer was sure of the promise given by the father of the hired child, who was one of the parties to the contract. And that probably shows the importance given to a social tradition like verbal promise in a rural society

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32. Since the contract ended satisfactorily, the promissory note was torn off at the termination of the contract.

where increasing commercialization has not been still able to shatter the personal nature of human relationships. As a deterrent against child labour's temptation to hire out his labour to other cultivators at higher wages in the peak harvesting period (mid April - mid June), stipulation in the agreement has been made that half amount of the prevailing wage-rate will be deducted from the wages if he absents himself during that period. Even during the non-peak season, the amount to be deducted (Rs.1.50) for absence a day is higher than the normal daily wage rate (i.e. about paise 85) of the hired child labour.

Now obviously, the low daily-wage rate accepted by the father of the hired out child labour, is a trade off against insecurity of employment and interest-free lump-sum advance payment. Given the nature of work for child labour like cattle maintenance, which requires regular daily work, child labour faces the problem of unemployment more severely than the male adult labour if not employed on a permanent basis. The employer by hiring in the child labour on a permanent basis, on the other hand, has ensured the continuous supply of child labour necessary for the daily work of cattle-maintenance, some farm work and running errands.

1.11 Permanent Male Adult Labour:

A male adult labour is hired on permanent basis either according to Siri (crop-sharer) system or theka (contract) system.

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But Siri system is practised only for annual employment whereas theka system is used even in half annual or monthly employment. The siri system includes a fixed proportion of the total gross output to be paid at the end of the year to the siri. This proportion was traditionally determined according to the hals a cultivator possessed.<sup>33</sup> Generally, 1/5th of the total produce was given to a permanent labourer if his employer possessed one hal. For two hals, the share will be 1/10th and so on. With the displacement of ploughs by tractors, a particular size of land (varying from village to village because of different fertilities of land) is taken as a proxy for one hal. This size of land may vary from 10 to 20 acres. The siri also bears the same share of costs of production which includes charges on irrigation, tractor maintenance, fertilizer, land revenue and labour costs but not on seeds and minor implements. Though the siri is not given any share of the fodder, he may be allowed to take some fodder for his milch animal, if he maintains any. In addition, siri is also given three meals and two teas a day or in lieu of that, some grain.

Siri's wife is supposed to render full participation in the cotton-picking operation without any payment for that.

Siri system is a more traditional and long-established system as compared to the theka system. In the theka system, the labourer is paid about half of his annual wage-bill as an advance interest-free payment to meet his urgent needs. Sometimes, some

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33. The literal meaning of the hal is plough. But here it means a pair of bullocks or a camel used by a cultivator on farm work. See Kessinger, op. cit. p. 67-68, Sharma, op. cit.

grain and gur is also given in lieu of the part of the advance cash payment. The next period of pay instalment is after lohiri (i.e. 13th of January). Deduction from the total wage bill is made for any abstention during the harvest period at the prevailing wage-rate and during the normal non-peak season at a rate pre-determined or the prevailing wage-rate both of which are above the daily-wage rate calculated on the basis of his total annual wage-bill.

Both for the siri as well as the labour employed on theka, a promissory note mentioning the amount of the advance payment with annual interest included in it, is written at the time of the formal writing of the contract. If the labourer breaks off the contract during the year, the written contract document stipulates that the whole amount has to be given back. But in actual practice, the defaulting labourer is paid the wages for the period of work done. This amount is deducted from the total advance paid to him and only the remainder has to be paid by the labourer to the cultivator. This practice is, no doubt, a reflection of the higher bargaining position of the labourer. But in the past till the very recent period, some cultivators used to write double the amount of the advance payment in the promissory note. In certain cases of defaulting labourers, they made them pay back double this amount. Such promissory notes now having been declared legally invalid, the employer's bargaining position has been weakened.

A specimen copy of each of the two types of permanent labour contract is appended in Appendix 3 and 4. No doubt certain practices prevailing in the region about this aspect, affect the form

and content of the labour-contract written.

Credit requirements are the primary reason forcing the labourers to go for permanent labour contracts, the security of employment being a secondary problem in a labour-shortage economy like Punjab. In fact, the necessity to have an assured supply of labour throughout the year is the only reason which impels the employer cultivators to hire labour on permanent annual basis. Debt-bondage, through the system of advance payment, is the only way for them to assure the constant supply of labour.<sup>34</sup> And in the absence of alternative credit facilities, the labourer even with higher bargaining power, has to seek permanent labour contract.<sup>35</sup> As

34. Two mutually opposing explanations are given of the phenomenon of bonded labour in agriculture. One line of argument (Utsa Patnaik, *Development of Capitalism in Agriculture*, EPW, Sept.72), explains it in terms of the existence of surplus labour without alternative outside employment opportunities. Such surplus labour, it is argued, is forced to seek a contract whose terms and conditions are bound to be unfavourable to him. In other-words, the cause of bondedness in such a situation is explained through the forced dependence of the dispossessed labourer on the land owner. The other line of argument (Jan Breman, Patronage and Exploitation: Changing Agrarian Relations in South Gujarat, Berkeley, 1975) seeks to explain the cause of bondedness in terms of labour-shortage thus necessitating the landowners to have attached permanent labour. The first argument attributes the existence of bondedness to labour-surplus whereas the second attributes that to labour-shortage. Quite obviously, the bonded nature of the labourer in the first case is due to their low bargaining power while in the latter it is due to the necessities of the landlord. The first kind of bondedness is purely economic in nature while the second requires exercise of extra-economic coercion. But where extra-economic coercion cannot be applied, such bondedness, paradoxically, reveals the higher bargaining power of the much demanded labour. The second seems to be the case in Punjab.

35. In a study of the system of labour contracts in Haryana, Sheila Bhalla shows that the complicated system of consumption loans to agricultural labour through a witness and advance payment system is an attempt by the landowners to seek counter-balancing measures against the increasing bargaining power of the agriculture labour - the result of increased demand for labour in the wake of 'Green Revolution' in Haryana. Sheila Bhalla, "New Relations of Production in Haryana Agriculture", EPW, March 27, 1976.

to the choice between siri system and theka system, two factors determine it most importantly: the level of economic activity of the cultivator and the price-level of agricultural commodities expected in a year. Labourers prefer to have sir with relatively prosperous cultivators in hope of a handsome share in the produce while the latter tend to prefer employment of permanent labour on theka basis because of the same reasons. The increasing prices of agricultural commodities increase the supply of labour seeking permanent employment as a siri while declining prices have just an opposite effect.

To sum up the preceding discussion, Punjab agriculture is characterised by the use of both family labour and hired labour though in different proportions on different farms. The main component of family labour is the male adult who participates in all kinds of operations. Old men and women participate in marginal operations, not related to work on the farm field. The participation of family females and children, though still prevalent in certain operations, seems to be declining as a result of combined impact of mechanization, increasing economic prosperity and new awareness of social values about women's and children's work. Though exchange of labour takes place between families of cultivating households, hiring out of family labour is a highly restricted phenomenon. The hiring in of labour takes the form of employment of children, females and male adults as casual labour and that of male children and male adults as permanent labour. The employment of casual labour corresponds to periods of peak demand in peak

seasons of agricultural work. Female labour participates in all kinds of agricultural operations except ploughing, sowing and irrigation. The child labour participates in all operations except ploughing and sowing-which require the formation of a skill acquired through age. Though the daily-wage rate of a casual labour is generally higher than that of a permanent labour and given the assured supply of employment in a labour-shortage economy like Punjab, the total wage bill of a casual labour comes to be bigger than that of a permanent labour, the necessity to meet certain urgent needs through a lump-sum money, forces the agricultural labour to seek permanent employment. The employers by advancing loan to the permanently employed labour, ensure regular supply of labour in a labour - scarce market. The choice between siri system and theka system of hiring permanent labour is determined by the price fluctuations for the agricultural commodities and the level of total agricultural production of a cultivator. The labourers prefer sir with a prosperous peasant and especially in a year of expected higher prices for agricultural commodities, whereas such a cultivator in such a situation, prefers to employ a permanent labour on theka basis. The labourers' preference for sir is guided by expectation of higher share in the produce in such a combination while cultivators' preference for theka in a self-same situation is based on a fear of losing greater share in both quantity and value to the labourer on sir basis.<sup>36</sup> Only the conditions in the labour-market

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36. Significant theoretical implications for the Marxist debate on mode of production in Indian Agriculture arising out of this phenomenon will be pointed out in Chapter 3.



27 | and the conjunctural circumstances decide the final form of the labour-contract. The tendency among the cultivators to hire a permanent labour is not a reflection of the attached-bonded character of farm labour in Punjab but rather, on the other hand, shows the higher bargaining strength the agriculture labour has gained as a result of labour use-increasing effects of the Green Revolution.<sup>37</sup>

In the next chapter, we would present some of the trends on the pattern of labour use among various size-classes of cultivators we observed on the basis of our analysis of more specific empirical data. We would especially emphasize the new tendency of non-systematic relationship between output per hectare on one hand and size of holding and labour utilization on the other. We would attempt to relate this phenomenon to new developments that seem to have taken place in the pattern of labour utilization in the sixties as a result of mechanization introduced in the State's agricultural sector.

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37. For a reply to certain of Bardhan's observations on the conditions of agricultural labour in Punjab, see S.S. Jh1, "Mechanization and Income Distribution in Punjab", Journal of Development Studies, Vol. 11 No. 3, 1975.

P.K. Bardhan, "The Green Revolution and Agricultural Labourers", EPW, Special No., July 1970.

## CHAPTER - 2

### OBSERVED PATTERNS OF LABOUR UTILISATION

#### Purpose of study:

The central focus of our enquiry in this chapter is:

1. to investigate the pattern of variations of total labour used per hectare by different size-classes of holdings and its impact on variations in output per hectare; and
2. to investigate the components of total labour utilised per hectare on different size-classes of holdings. The questions investigated under the second rubric are:
  - (a) Pattern of availability and use of different components of family labour among different size-classes of holdings.
  - (b) Pattern of hired labour used on different size-classes of holdings.

In Section I below, we describe the source of our data and in Section II, we report the results of the exercises we did in investigation of this data.

#### I

##### 2.1 Source of data:

The data used in this study were collected by the Department of Economics and Sociology, Punjab Agriculture University, Ludhiana in collaboration with Ministry of Agriculture, Government of India, New Delhi for the studies in the Economics of Farm

Management. The data refers to three years 1967-68, 1968-69 and 1969-70. The erstwhile district of Ferozepur, before a new district Faridkot was carved out of it, was chosen for study. Two determining considerations weighed in support of using this data:

- (a) These were the latest data giving information for three consecutive years 1967-68, 1968-69 and 1969-70, on patterns of labour utilisation. The data, having been collected by a staff experienced in conducting Farm Management Studies, are rated high from the view point of reliability.
- (b) These data were easily available with the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, New Delhi and the Department of Economics and Sociology, Punjab Agriculture University, Ludhiana. The data as given in Part-II Tables (household-wise) of the Studies in the Economics of Farm Management, available with the two above mentioned organisations were used for the purpose of our study.

## 2.2 Sample Design:

Method of multistage stratified random sampling was used to make the sample design, with village as the primary unit of sampling and operational holding as the ultimate unit. District was demarcated into three zones on the basis of soil type, cropping pattern and irrigation facilities. Fifteen villages were selected

for this study. The number of villages selected from each zone was proportional to the cultivated area of the zone. The villages in each zone were selected with probability proportional to the cultivated area. The number of villages selected from each zone and the list of selected villages are given in Appendix 8.

From each village, ten holdings - two from each of the five size-groups - were randomly selected. For forming the size-groups, the operational holdings in all the fifteen selected villages were pooled and arranged in ascending order of the size of the cultivated area. The holdings were then divided into five strata in such a way that the cultivated area in each subgroup was about 20 per cent. Appendix 9 gives information on the distribution of the selected holdings according to size-groups in the year 1967-68, the first year of the study. In all, 150 households were selected for the study. The size-group classification of the farming households used in our study is, however, slightly different from the one used in the original Farm Management Study. We differentiated holdings into following six size-groups.

1.           0-5    hectares (Holdings with net operational area less than 5 hectares).
2.           5-10   hectares (Holdings with net operational area more than 5 hectares but less than 10 hectares).
3.           10-15   hectares (Holdings with net operational area more than 10 hectares but less than 15 hectares).
4.           15-20   hectares (Holdings with net operational area more than 15 hectares but less than 20 hectares).
5.           20-25   hectares (Holdings with net operational area more than 20 hectares but less than 25 hectares).
6.           25    hectares & above (Holdings with net operational area more than 25 hectares).

In this form, the number of size-groups in our study is six compared to five in the Farm Management Study. Though there is no absolute standard to characterise a peasant holding, on the basis of holding size, as small, middle or big<sup>1</sup>, increasing the number of size-groups does offer a better way of gauging the process of differentiation in the peasantry. In fact in the course of our study, we felt that to see in a more minute detail the extent of differentiation of the peasantry, the number of size-groups needs to be increased even more, especially in the lower and middle categories since they comprise the bulk of holdings (see the Tables 2.1, 2.2, 2.3 below). The smaller the number of size-groups, the more the differentiation among the peasantry gets blurred. This will be especially more important when a bigger area with a bigger sample of holdings is surveyed. Though an element of arbitrariness in this form of division of holdings into size-groups is unavoidable, our classification here, does not differ substantially from the one made in the FMS study. (See

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1. Holdings in the size-group 0-5 hectares (i.e. 0 to 12.5 acres) may be defined as small in Punjab whereas in West Bengal the holdings of 12.5 acres size are grouped in the size group comprising the next to the largest size group as shown below:

0.01	-	1.25
1.25	-	2.50
2.50	-	3.65
3.75	-	5.00
5.00	-	7.50
7.50	-	10.00
10.00	-	15.00
15.00 & above		

Appendix 9 & 10). Undoubtedly, the method of differentiating peasantry by taking account of the total resource position of a peasant household (e.g. total capital stock or total output) is superior to the one which takes into account only the holding size.<sup>2</sup> But we adopted the more traditional method of differentiating peasantry according to size-groups since our focus was on investigating the pattern of labour use which follows, given a particular structure of the distribution of land-holdings. We, however, did not make our conclusions only on the basis of averages of farm variables for different size-groups. This method was supplemented by our observations regarding graphs and scatter diagrams we drew on the basis of individual household data in order to discern the relationship between the variables we studied. But in order to economise on space use, we could not provide here all the scatter diagram we had drawn. For certain relationships, which were more crucial to our interpretation, we have provided the scatter diagrams for one year, 1967-68. In such cases, the trend reflected for years 1968-69 and 1969-70 corresponded more or less to the one for 1967-68. However, in none of the relationships studied, we observed any incongruity between the trend observed from average variables and that one from the scatter diagrams

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2. Utsa Patnaik argues this point forcefully in her paper "Economies of Farm size and Farm scale: Some Assumptions Reexamined," EPW, Special No. 1972. Lenin uses this method in his analysis of the process of differentiation in the Russian peasantry. V.I. Lenin, "The Development of Capitalism in Russia, Collected Works, Vol.3, Moscow, 1964; 'Capitalism in Agriculture' (p.105-159), CW, Vol. 4, Moscow, 1964; The Capitalist System of Modern Agriculture (p. 423-446), CW, Vol. 16, Moscow, 1967; 'New Data on the Laws Governing the Development of Capitalism in Agriculture', (13-102) CW, Vol. 22, Moscow, 1964.

drawn on the basis of individual household data.

Tables 2.1, 2.2 and 2.3 give the distribution of holdings into different size-groups according to our method of classification of holdings for the year 1967-68, 1968-69 and 1969-70 respectively.

TABLE 2.1

Distribution of holdings into size-groups (1967-68).

No.	Size-group(hectares)	No. of holdings:	Average size of holding(hectares)
1.	0-5	23	4.05
2.	5-10	47	7.45
3.	10-15	37	12.32
4.	15-20	23	17.58
5.	20-25	8	21.87
6.	25 and above	12	33.40
	Total	150	12.53

TABLE - 2.2

No.	Size-group(hectares)	No. of holdings:	Average size of holding (hectares)
1.	0-5	21	3.61
2.	5-10	52	7.45
3.	10-15	34	12.37
4.	15-20	26	17.54
5.	20-25	7	21.89
6.	25 and above	10	36.39
	Total	150	12.37

TABLE - 2.3

<u>No.</u>	<u>Size-group (hectares)</u>	<u>No. of holdings:</u>	<u>Average size of holding (hectares)</u>
1.	0-5	23	3.61
2.	5-10	54	7.44
3.	10-15	28	12.45
4.	15-20	26	17.25
5.	20-25	6	22.77
6.	25 and above	13	34.45
	Total	150	12.44

The fact that even the smallest holding size-group has an average size of holding equal to about 10 acres, shows that there is a relative predominance of bigger holdings in Ferozepur district. And we pointed out above that this size-group stratification is fairly representative of the structure of land-distribution in Ferozepur district since in the original FMS, all the holdings in the selected villages were stratified into five size-groups in such a way that each size-group contributed equal (i.e. 20%) share to the total cultivated area of the selected villages.

## II

The scope of our study is limited to the investigation of the pattern of labour utilisation on crop production only and, therefore, excludes from analysis the investigation of labour use on cattle maintenance, social affairs, transportation, holidays etc.

Our enquiry is centred around two main aspects:



We proceed by first analysing the composition (sex-age wise) and availability of family labour force and the pattern of the utilisation by different sections of the peasantry.<sup>1</sup> It is followed by an analysis of the pattern of hired labour use and its components on different size-classes of holdings. And finally we come to the central question of our enquiry in this chapter namely, the question of relationship between total labour utilisation per hectare and output per hectare between different size-classes of holdings.

1. By different sections of the peasantry, we mean here the different size-groups of cultivating households. Though the method of characterisation of different sections of the peasantry as small, middle or big (or rich) is a highly controversial and debatable one, for the purpose of analysis here, we take the following size-groups of cultivating households as rough proxy for different sections of the peasantry.

0-5 )	Small peasantry.
5-10 )	
10-15 )	Middle peasantry.
15-20 )	
20-25 )	Big (rich) peasantry.
25 & above )	

For an interesting debate in the Indian context, see Utsa Patnaik's criticism from a Marxist position of Ashok Rudra's method of classifying peasantry on the basis of size of holding. Ashok Rudra, 'Big Farmers of Punjab', EPW Sept. 1969, Dec. 1969; 'In search of a capitalist farmer', EPW, June 1970. Utsa Patnaik, 'Capitalist Development in Agriculture. A Reply', EPW, Nov. 1971; Utsa Patnaik, 'Capitalist Development in Agriculture' Further comment', EPW, Dec. 25, 1971.

We also refrain from characterising any section of the peasantry as 'capitalist' since the treatment of this question involves an entirely different theoretical-methodological approach which is out of the purview of our present enquiry. We use the terms 'different sections of the peasantry', 'different size-groups' and 'different size-categories' interchangeably in the present context. We would also like to point out here that the terms small-sized, middle-sized and big-sized or small peasantry, middle peasantry and big peasantry are used strictly in the relative sense here and does not imply any absolute standards with respect to any holding size.

2.3 Variations in the total size of the family  
(size-group wise):

In order to see the relationship between size of holding and the total size of the family, we plotted data on size of holding and total size of family, for all the three years 1967-68, 1968-69 and 1969-70.

From the scatter diagram for the year 1967-68, we noted that the scatter of points showed that the size of family reveals a weak tendency to rise with the size of holding. till holding size of 20 hectares, it tended to fall after that. Size of family, therefore, does not seem to hold any consistent relation to the size of holding for the year 1967-68. But on the other hand, looking at diagrams representing the data plotted for years 1968-69 and 1969-70 respectively, we observed that most of the points were clustered around a positively sloped rising curve. A tendency, though not very strong and consistent one, towards positive relationship between size of holding and the size of family was, therefore, discernible from our data for the years 1968-69, 1969-70.

Table 2.4 below shows the average size of family for different size-groups of the peasantry for the year 1967-68, 1968-69 and 1969-70.

TABLE - 2.4

Average size of family (size-group wise)

1967-68, 1968-69 and 1969-70.

Size group (hectares)	Average size of family		
	1967-68	1968-69	1969-70
0-5	4.95 (23)	6.66 (21)	7.08 (23)
5-10	4.85 (47)	7.59 (52)	8.37 (54)
10-15	6.24 (37)	8.85 (34)	8.35 (28)
15-20	8.21 (23)	11.69 (26)	10.57 (26)
20-25	7.75 (8)	9.28 (7)	8.83 (6)
25 and above	6.66 (12)	11.50 (10)	11.15 (13)
Total average	6.02	8.80	8.81

Note: Figures in the brackets indicate the number of households in the corresponding size-group.

The average size of the family for all the size-groups tends to rise for the years 1968-69, 1969-70 as compared to the year 1967-68. The same increasing trend is not consistently maintained from year 1968-69 to 1969-70 and, in fact, the average size of family declines in 1969-70 for the three bigger size-groups though the total average shows a marginal rise. Only a more detailed demographic study of the district in general and for these selected families in particular, for these years, can explain these fluctuations in the size of families for different size-groups. As regards the question of relationship of size of holding, we observe that the Table 2.4 confirms the trend observed from the

scatter-diagrams we drew i.e. except for year 1967-68, the size of family tends to rise with the rise in the size of family though for all the three years, the average size of the family after showing a consistent positive relationship to the size of holding, declines for the size-group 20-25 hectares and again rises for the category 25 hectares and above for the years 1968-69 and 1969-70. The number of holdings in the category 20-25 hectares, being very small, no significant conclusion can be deduced from this phenomenon. A feature common to all the three years is that the lowest family sizes correspond to the lowest size-groups. On the whole, a positive relationship, though not very strong and consistent, one, between the size of holding and the size of family is observable. From the view point of labour utilisation, what is more important, however, is to see the pattern of work participation by different components of the family i.e. male adults, female adults, children<sup>4</sup> in different size-groups of holdings.

2.4 Utilisation of family male adult labour force on farm work (size-group wise)

Tables 2.5, 2.6 and 2.7 below show the extent of utilisation of family male adult earners on farm work by different sections of the peasantry for the years 1967-68, 1968-69 and 1969-70 respectively. For all the three years, the average number of male adults available per household, the average number of male adult earners on farm work per household and the average number of male dependents per household tends to rise with the increase in the holding size.

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4. The data does not specify the sex of the child labour.

TABLE - 2.5

Average number of family male adults, earners  
on farm work and dependents per household  
(Size groups wise) (1967-68).

Size-group (hectares)	Average No. of male adults per household	Average No. of male adult ear- ners on farm work per house- hold:	Average No. of non-ear- ning adult male depen- dents per household*	% of earners to available male adults**	% of dependents to available male adults:
(1)	(2)	(3)	(4)	(5)	(6)
0-5	1.65	1.17	0.43	70.90	26.06
5-10	1.80	1.55	0.19	86.11	10.55
10-15	2.18	1.83	0.32	83.94	14.67
15-20	2.86	2.17	0.69	75.87	24.12
20-25	3.25	2.62	0.62	80.61	19.07
25 and above	3.16	2.16	1.00	68.35	31.64
<b>Total:</b>	<b>2.22</b>	<b>1.76</b>	<b>.42</b>	<b>79.27</b>	<b>18.91</b>

TABLE- 2.6

Average number of family male adults, earners  
on farm work and dependents per household  
(Size-group wise) 1968-69.

(1)	(2)	(3)	(4)	(5)	(6)
0-5	2.09	1.61	0.38	77.03	18.18
5-10	2.28	1.92	0.38	80.67	15.96
10-15	3.11	2.29	0.76	73.63	24.43
15-20	3.19	2.46	0.57	77.11	17.86
20-25	2.71	1.71	1.00	63.09	36.90
25 and above	3.60	2.50	1.10	69.44	30.55
<b>Total:</b>	<b>2.74</b>	<b>2.08</b>	<b>.58</b>	<b>75.91</b>	<b>21.16</b>

\* The figure for non-earning dependents is reached by deducting from the total number of male adults available in the family, the number of male adult earners on both farm and non-farm work.

\*\* By earners here we mean more restrictively 'earners on farm work'.

TABLE - 2.7

Average number of family male adults, earners on farm work and dependents per household(size-group wise)1969-70.

Size-group (hectares)	Average No. of male adults per household:	Average No. of male adult earners on farm work per household:	Average No. of non-earning adult male dependents per household	% of earners to available male adults	% of dependents to available male adults.
(1)	(2)	(3)	(4)	(5)	(6)
0-5	2.00	1.87	0.17	89.00	8.50
5-10	2.53	1.98	0.50	78.26	19.96
10-15	2.46	1.82	0.64	73.98	26.01
15-20	2.92	2.23	0.57	76.36	19.52
20-25	3.33	2.00	1.33	60.06	39.93
25 and above	3.38	2.29	0.69	79.58	20.41
<b>Total:</b>	<b>2.61</b>	<b>2.02</b>	<b>.55</b>	<b>77.39</b>	<b>21.07</b>

TABLE - 2.8

Average number of family female adults, earners on farm work and dependents per household (size-group wise) 1967-68.

Size-group (hectares)	Average No. of female adults per household:	Average No. of female adult earners on farm work per household:	Average No. of Non-earning female adult dependents per household:	% of earners to available family female adults:	% of dependents to available family female adults:
(1)	(2)	(3)	(4)	(5)	(6)
0-5	1.74	0.17	1.57	9.77	90.22
5-10	1.68	0.04	1.64	2.38	97.61
10-15	2.10	0.08	2.02	3.80	96.19
15-20	2.78	0.00	2.78	0.00	100.00
20-25	2.62	0.00	2.62	0.00	100.00
25 and above	2.50	0.00	2.50	0.00	100.00
<b>Total:</b>	<b>2.08</b>	<b>.06</b>	<b>2.02</b>	<b>2.88</b>	<b>97.11</b>

TABLE - 2.9

Average number of family female adults, earners on farm work and dependents per household (size groups wise) 1968-69.

Size-group (hectares)	Average No. of family female adults per household:	Average No. of family female adult earners on farm work per household	Average No. of non-earning family female adults per household	% of earners to available family female adults	% of dependents to available family female adults
(1)	(2)	(3)	(4)	(5)	(6)
0-5	1.76	0.19	1.57	10.79	90.22
5-10	2.04	0.10	1.94	4.90	95.09
10-15	2.38	0.09	2.29	3.78	96.21
15-20	2.88	0.04	2.84	1.38	98.61
20-25	2.57	0.00	2.57	0.00	100.00
25 and above	3.10	0.00	3.10	0.00	100.00
Total:	2.33	.09	2.24	3.36	96.13

TABLE - 2.10

Average number of family female adults, earners on farm work and dependents per household (size group wise) 1969-70.

(1)	(2)	(3)	(4)	(5)	(6)
0-5	2.52	0.22	2.32	8.73	92.06
5-10	2.24	0.06	2.18	2.67	97.32
10-15	2.50	0.04	2.46	1.60	98.40
15-20	3.03	0.00	3.03	0.00	100.00
20-25	2.66	0.00	2.66	0.00	100.00
25 and above	3.07	0.00	3.07	0.00	100.00
Total:	2.56	.06	2.50	2.34	97.65

TABLE - 2.11

Average number of family children, earners on farm work  
and dependents per household (size-group wise) 1967-68.

Size-group (hectares)	Average No. of family children per house- hold:	Average No. of family children on farm work per household:	Average No. of non- earning de- pendent family child- ren per household:	% of ear- ners to available family children:	% of depen- dents to available family children:
(1)	(2)	(3)	(4)	(5)	(6)
0-5	1.52	0.22	1.30	14.47	85.52
5-10	1.36	0.13	1.23	9.55	90.44
10-15	1.94	0.10	1.84	5.15	94.84
15-20	2.56	0.08	2.48	3.12	96.87
20-25	1.87	0.37	1.50	19.78	80.21
25 and above	1.00	0.00	1.00	0.00	100.00
Total:	1.71	.13	1.58	7.60	92.39

TABLE - 2.12

Average number of family children, earners on farm work  
and dependents per household (size-group wise 1968-69.)

(1)	(2)	(3)	(4)	(5)	(6)
0-5	2.80	0.19	2.61	6.78	93.21
5-10	3.17	0.13	3.04	4.10	95.89
10-15	3.35	0.09	3.26	2.69	97.31
15-20	5.62	0.12	5.50	2.13	97.86
20-25	4.00	0.00	4.00	0.00	100.00
25 and above	4.80	0.00	4.80	0.00	100.00
Total:	3.73	.11	3.62	2.94	97.05



TABLE 2.13

Average number of family children, earners on farm work  
and dependents per household (size-group wise) 1969-70.

Size-group (hectares)	Average No. of family children per household:	Average No. of family child- ren on farm work per household:	Average No. of non-ear- ning depen- dent family children per household:	% of earners to available family children:	% of depen- ents to available family children
(1)	(2)	(3)	(4)	(5)	(6)
0-5	2.56	0.26	2.30	10.15	89.84
5-10	3.59	0.11	3.48	3.06	96.93
10-15	3.39	0.18	3.21	5.30	94.69
15-20	4.62	0.08	4.54	1.73	98.26
20-25	2.83	0.00	2.83	0.00	100.00
25 and above	4.69	0.00	4.69	0.00	100.00
<b>Total:</b>	<b>3.64</b>	<b>.13</b>	<b>3.51</b>	<b>3.57</b>	<b>96.42</b>

If we look at the percentage figures for male adult earners and dependents in various size-groups and on an average, certain interesting features can be observed. Looking at column(6) in Tables 2.5, 2.6 and 2.7, we observe that about 20% of the total family male adult population consists of non-earning dependents. Data on age-wise structure of the male adult population is required to know the age-wise structure of non-earning dependents. Without the availability of data in this form, the extent of male-adult population being dependent due to old age cannot be estimated. In spite of this limitation, it is obvious from the Tables 2.5, 2.6, 2.7, above that a significant proportion of the family male adult population in agriculture in Ferozepur district is not a part of

the active labour force. Though the variations in the percentage of earners and dependents to family male adults are not consistent with the variations in the holding size, the proportion of dependents tends to rise with the rise in the holding size. The fluctuations in the percentage figures for 20-25 size group during all three years are not very significant. Because of the small number of holdings in this category, a shift of one number from earners to dependents and vice-versa affects the percentage significantly. The tendency of the proportion of male adult dependents to family male adults available, to rise with the rise in the holding size may be attributable to the relatively early retiring from farm work of the male adults in bigger holding size groups. On the smaller and middle-sized holdings, the male adults have to work on farms probably till a relatively older age. Any definite conclusion, however, in this regard can be reached only if we have data on the age-structure of the farm family population.

#### 2.5 Utilisation of family female adults on farm work (size-group wise)

Tables 2.8, 2.9 and 2.10 show us the extent of family female labour utilisation on different size-classes of holdings for the years 1967-68, 1968-69 and 1969-70 respectively. We can observe that the extent of family female adult members being employed on farm-work is very negligible (2.3% to 3.86%). It is limited only to the lowest strata of holdings where about one-tenth of their woman-folk is utilised on farm work. As the holding size increases, the phenomenon of family females working on farms becomes

negligible and is totally absent in the case of bigger holdings. But unlike the male adult population, the high percentage of dependency for the family female adults does not signify that they are not occupied in work. It only shows that other forms of work like domestic work are more important for the female members. The question of family female employment on farm work is closely intertwined with social customs specific to different caste groups and regional areas. Our own impressionistic observation, which can be verified only by a different type of empirical data, is that family female employment on farm work is less prevalent in the Malwa region of Punjab than, for instance, in the Doaba region.<sup>5</sup>

Caste-group wise, Jat Sikh cultivators are probably more resistant to their woman-folk being employed on farm work than, for example, the Gujjars and Kamos. Association of family female employment with certain farm operations due to caste and cropping pattern variations may also be found to be different in different regions. For example, in the cotton-belt of Ferozepur district, work participation by women of even middle and big holding size groups in the operation of cotton picking is socially acceptable whereas in paddy-growing areas of Zira Tehsil, women participate more freely

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5. Punjab consists of three regions - Malwa, Doaba and Majha. Malwa region contains the districts of Ferozepur, Faridkot, Bhatinda, Sangrur, Patiala and Ludhiana in the Lower Southern part of Punjab. Doaba region constitutes the North-East and Central districts of Hoshiarpur, Kapurthala, Jullunder. Ropar district shares its traditions with both the regions. Majha region constitutes the two top Northern districts of Amritsar and Gurdaspur. These divisions are not very hard and fast. Interpenetration of traditions and customs is bound to occur, especially in contiguous areas. To give an example, Zira Tehsil of Ferozepur district in its customs, traditions and even the dialect spoken, resembles more the adjoining Amritsar district of Majha Region.

in transplanting of paddy. The question of employment of women being a highly sensitive social question, the extent and pattern of their employment in a transitional society, is inevitably determined by a complex interplay of economic and social-historical forces.

## 2.6 Utilisation of family child labour on farm work.

The extent and pattern of family child labour employment is directly determined by the economic status of a cultivating household. Tables 2.11, 2.12, and 2.13 giving the average number per household and percentage of family children employed on farm work for years 1967-68, 1968-69 and 1969-70 respectively confirm our hypothesis.

We observe from the Tables 2.11, 2.12 and 2.13 above that on an over-all average, the extent of family child labour employment on farm work is very small. It is 2.94% and 3.57%. (See Column 5 in Tables 2.12 and 2.13) for the years 1968-69 and 1969-70. A slightly higher percentage in year 1967-68 (See Column 5, Table 2.11) is accounted by an abnormally high percentage of family child labour employment on farm work for the category 20-25 hectares, which in turn is the result of a very small number of holdings in this sub-group. As a tendency, child labour employment on family farms tends to decline with the rise in the size of holding. For the years 1968-69 and 1969-70, no child labour employment on family farms is reported for the two top categories 20-25 hectares and 25 hectares and above. For the year 1967-68, no child labour

employment on family farms is reported for the largest size group i.e. 25 hectares and above. As the economic status of a cultivating household improves, there is a tendency to reduce the employment of their children on farm work and the big peasants are shown to be not employing their children on farm work. It is quite probable that a higher percentage of children are sent for school education by the big peasant families. The size of family - which itself affects the economic strength of a cultivating household - of course, enters decisively in this process of decision-making. The decision to employ their children on farm work or to send them for school education, is largely determined by the economic condition of a cultivating household.

2.7 Distribution of farming families employing family females and children on farm work (size-group wise).

To look a little more closely into the pattern of employment of family females and children on farm work, we compute below the number of households in each size-group and its percentage to the total number of households in the corresponding size-group, who employ their woman-folk and children on farm work. Tables 2.14, 2.15 and 2.16 below give the results for years 1967-68, 1968-69, 1969-70 respectively. (see page 51, 52 below)

If we look at column(5) of Tables 2.14, 2.15 and 2.16, we will observe that the percentage of households who employ their woman-folk on farm work declines consistently as the holding size increases. Though the extent of employment of family female members on farm work varies from year to year for the same size-group, the

biggest size-categories (i.e. 20-25 and 25 and above) for all the three years donot show any employment of family females on farm work. The absence of family females on farm work is reported even for one of the middle-sized categories i.e. 15-20 hectares, for two years 1967-68 and 1969-70 whereas for the year 1968-69, there is only one household in this category which reports employment of female members on farm work. Whether we see the employment of family female members on farm work per household as proportion of available family female adult population per household or in terms of proportion of households employing female members on farm work, we observe that the over-all level of employment of family female adults on farm work is very low in Ferozepur district. Whatever little employment of family female adults is reported, it is confined to a small number of small and middle sized holdings. The economic necessities to make the best available use of their family labour force, override considerations of social prestige on the question of female labour employment in the case of certain hard-pressed families in the lower and middle range of holdings. It is not uncommon that if certain middle peasant family rides higher into the economic ladder, the withdrawing of its family female members from farm work is itself considered as reflective of their new higher socio-economic status. Paradoxically, though the low level of family female employment on farm work in Punjab reflects the strong social barriers and caste considerations on this aspect, it also reflects the relatively better economic conditions of the Punjabi

peasantry in general.<sup>6</sup>

Looking at column(6) of Tables 2.14, 2.15 and 2.16, we notice that the incidence of family child labour employment on farm is higher than that of female labour for all size-classes of holdings. In the bigger holdings, however, even the phenomenon of family child labour employment on farm work is also absent. Reporting of exceptionally higher percentage of child labour employment on farm work in the category 20-25 for the year 1967-68 is due to very small number of holdings in this subgroup. An increase or decrease of one number affects the percentage significantly.

Though the social barriers against family child labour employment on farm work are relatively less rigid in Punjab, the withdrawing of family children from farm work is a direct index of the higher socio-economic position of a cultivating household. About 1/4th to 1/5th of the households in the smallest size group 0-5 hectares, report employment of their children on the farm work. This percentage declines as the size-group moves upto a higher scale. Nothing can be said whether the remaining proportion of the children - not reported as working on farms - in different size-groups are sent to schools or not, unless relevant data is available on this

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6. Martin H. Billings and Arjan Singh, 'Mechanisation and the Wheat Revolution: Effects on Female Labour in Punjab', EPW, Dec. 1970, show that higher incidence of female labour employment on farm work in hilly areas of Kangra district (now in Himachal Pradesh), relatively lower incidence of this in districts of Mohindergarh and Gurgaon (now in Haryana) and very low incidence of this phenomenon in Ludhiana, Jullundur, Patiala districts of Punjab correspond to the increasing levels of economic development in these areas respectively.

TABLE 2.14

Number and Percentage of households employing family females and children on farm work (size group wise) 1967-68.

Size group (hectares)	No. of households employing family females on farm work.	No. of households employing family children on farm work.	Total no. of households.	Percentage of households employing family females on farm work to total no. of households (% of (2) to (4))	Percentage of households employing family children on farm work (% of (3) to (4))
(1)	(2)	(3)	(4)	(5)	(6)
0-5	2	5	23	8.69	21.73
5-10	2	6	47	4.25	12.76
10-15	2	3	37	5.40	8.10
15-20	0	2	23	0.00	8.26
20-25	0	2	8	0.00	25.00
25 and above	0	0	12	0.00	0.00
Total:	6	18	150	4.00	12.00

TABLE 2.15 1968-69

0-5	4	4	21	19.04	19.04
5-10	5	7	52	9.61	13.46
10-15	3	3	34	8.82	8.82
15-20	1	3	26	3.84	11.53
20-25	0	0	7	0.00	0.00
25 and above	0	0	10	0.00	0.00
Total:	13	17	150	8.66	11.33



TABLE - 2.16

Number and Percentage of households employing family females and children on farm work(size-group wise) 1969-70.

Size group (hectares)	No. of households employing family females on farm work.	No. of households employing family children on farm work.	Total no. of households.	Percentage of house- holds employing family females on farm work to total no. of households (% of (2) to (4)).	Percentage of households employing family children on farm work(% of (3) to(4)).
(1)	(2)	(3)	(4)	(5)	(6)
0-5	5	6	23	21.73	26.08
5-10	3	6	54	5.55	11.11
10-15	1	3	28	3.57	10.71
15-20	0	2	26	0.00	7.69
20-25	0	0	6	0.00	0.00
25 and above	0	0	13	0.00	0.00
Total:	9	17	150	6.00	11.33

aspect. The sending of children to non-farm work is, however, reported to be nil by all sections of the peasantry for all the years of study.

2.8 Pattern of family earners' employment on non-farm work.

We had seen above (2.4, Tables 2.5, 2.6, 2.7) that percentage of male adult earners on farm employment to the total family male adult population is relatively higher for smaller and middle-sized holding groups. We need to see whether the same trend exists in the case of family earners employed on non-farm work.

Table 2.17 below gives the information on this aspect. Non-farm employment by both female adults and children is reported to be nil for all the three years.

TABLE 2.17

Number and percentage of households sending their male adult earners for non-farm work (size-group wise) 1967-68, 1968-69, 1969-70.

Size-group: (hectares)	No. of households sending their male adults earners for non-farm work.			Percentage of households sending their male adult earners for non-farm work to total no. of households.		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
0-5	1	2	1	4.34	9.52	4.34
5-10	3	3	3	6.38	5.77	5.28
10-15	1	2	0	2.70	5.88	0.00
15-20	0	2	3	0.00	7.69	11.54
20-25	0	0	0	0.00	0.00	0.00
25 and above	0	0	0	0.00	0.00	0.00
<b>Total:</b>	<b>5</b>	<b>9</b>	<b>7</b>	<b>3.33</b>	<b>6.00</b>	<b>4.66</b>

From the Table 2.17, we observe that the over-all proportion of male adult earners being sent for non-farm work is very low in Ferozepur district. It varies from 3.33% to 6.00% to 4.66% for the years 1967-68, 1968-69, 1969-70 respectively. Whatever little dependence on non-farm work is reported, it is confined to smaller and medium-sized holding groups. Some economically hard-pressed families in these size-groups resort to some forms of urban or non-farm rural occupations in order to supplement the family earnings from the family farm.<sup>7</sup> The bigger (or richer) peasants consider it as socially disrespectable to allow their family adult members to depend on non-farm occupations. But data on this aspect seems to be little inadequate. Though it may be true that bigger peasant families have high prestige-value attached to work on their own land, it is highly improbable that such families would resist employment for their male adults in the higher echelons of civil services and military. More detailed data on the pattern of outside employment by family members, giving information on the specific nature of such employment is required to further verify our doubts about the present data on this aspect.

Employment by family females and children on non-farm work being nil for all size-classes of holdings and that on farm work being very low-confined only to a few families in the lower and middle-sized holdings (See 2.5, 2.6 and 2.7 above), the question of

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7. G.S. Bhalla (1972) in his study of Haryana agriculture, also observed this trend in the case of Haryana. G.S. Bhalla, Changing Agrarian Structure in Haryana: A Study of the Impact of Green Revolution, Govt. of Haryana, Chandigarh, 1972, p. 16.

the extent of availability and utilisation of male adult population on farm work, therefore, holds the key to an understanding of the pattern of family labour utilisation by different sections of the peasantry. As we saw in 2.8 above that the proportion of family male adults seeking employment outside agriculture is very low and is limited only to a few farming households in the lower-size holdings groups, we observe that the major proportion of the family male adults is occupied in agriculture. This proportion works out to be varying between 3/4th to 4/5th for our sample data. (See 2.4, Tables 2.5, 2.6 and 2.7). The variations in availability of adult male earners per hectare to different sections of the peasantry is, therefore, a determining element in the differential pattern of utilisation of family labour force.

2.9 Variations in availability of male adult earners per hectare (size-group wise).

To see the relationship between male adult earners per hectare and the size of holding, we plotted the two variables on to graphs. The scatter of points, for all the three years, revealed clearly a negative relationship between size of holdings and male adult earners per hectare i.e. the number of male adult earners per hectare declines consistently as the size of holding increases.

Table 2.18 below confirms the trend observed.

TABLE - 2.18

Average number of male adult earners per hectare  
(size-group wise) 1967-68, 1968-69, 1969-70.

Size group (hectares)	<u>Male adult earners per hectare (number)</u>		
	1967-68	1968-69	1969-70
0-5	0.31	0.47	0.48
5-10	0.21	0.27	0.28
10-15	0.15	0.18	0.16
15-20	0.12	0.14	0.12
20-25	0.12	0.09	0.09
25 and above	0.06	0.07	0.08
	*		
Total:	0.18	0.23	0.23

The availability of greater number of male adult earners per hectare on smaller sized holdings and relatively less of that on middle and big holdings can be expected to result in greater utilisation of family labour per hectare on smaller holdings and relatively less of that on middle and big holdings, unless, of course, if the hiring out of family labour by smaller holdings and hiring in of this labour by bigger holdings evens out the utilisation of this differential availability of family labour. As we will see now this difference is not evened out and does result in differential levels of labour use on different farm size groups. After having discussed the aspect of extent of availability of the different components of family labour force on farm work, let us proceed to discuss the aspect of the patterns of its actual utilisation by different size classes of holdings.

2.10 Utilisation of family labour per hectare (size group wise)

In order to test the relationship between size of holding and family labour per hectare, we plotted the two variables on to graphs, Fig. 2.1 represents the data plotted for the year 1967-68. The scatter-diagram for the years 1968-69 and 1969-70 also showed the same trend. For all the three years, the scatter of points showed that size of holding and family labour per hectare have an inverse relationship i.e. the family labour utilised per hectare tends to decline with the increase in the size of holding. Table 2.19 gives the average figures for family labour per hectare in each category.

TABLE 2.19

Average family labour per hectare (size groups wise)  
1967-68, 1968-69, 1969-70.

Size group (hectares)	<u>Family labour per hectare (hours)</u>		
	1967-68	1968-69	1969-70
0-5	562.95	588.95	742.87
5-10	348.91	399.13	458.33
10-15	274.95	316.06	244.93
15-20	210.57	219.76	275.31
20-25	177.38	149.86	134.00
25 and above	92.42	61.20	97.00
Total:	312.61	341.76	386.1

From the Table 2.19, it is clear that the utilisation of family labour per hectare declines consistently as we move up to larger size groups. It is difficult to say whether the higher

FIG, 2.1

FMS, FERROZE PUR

1967-68

Scale:

1 unit = 1 hect.

1 unit = 10 hours

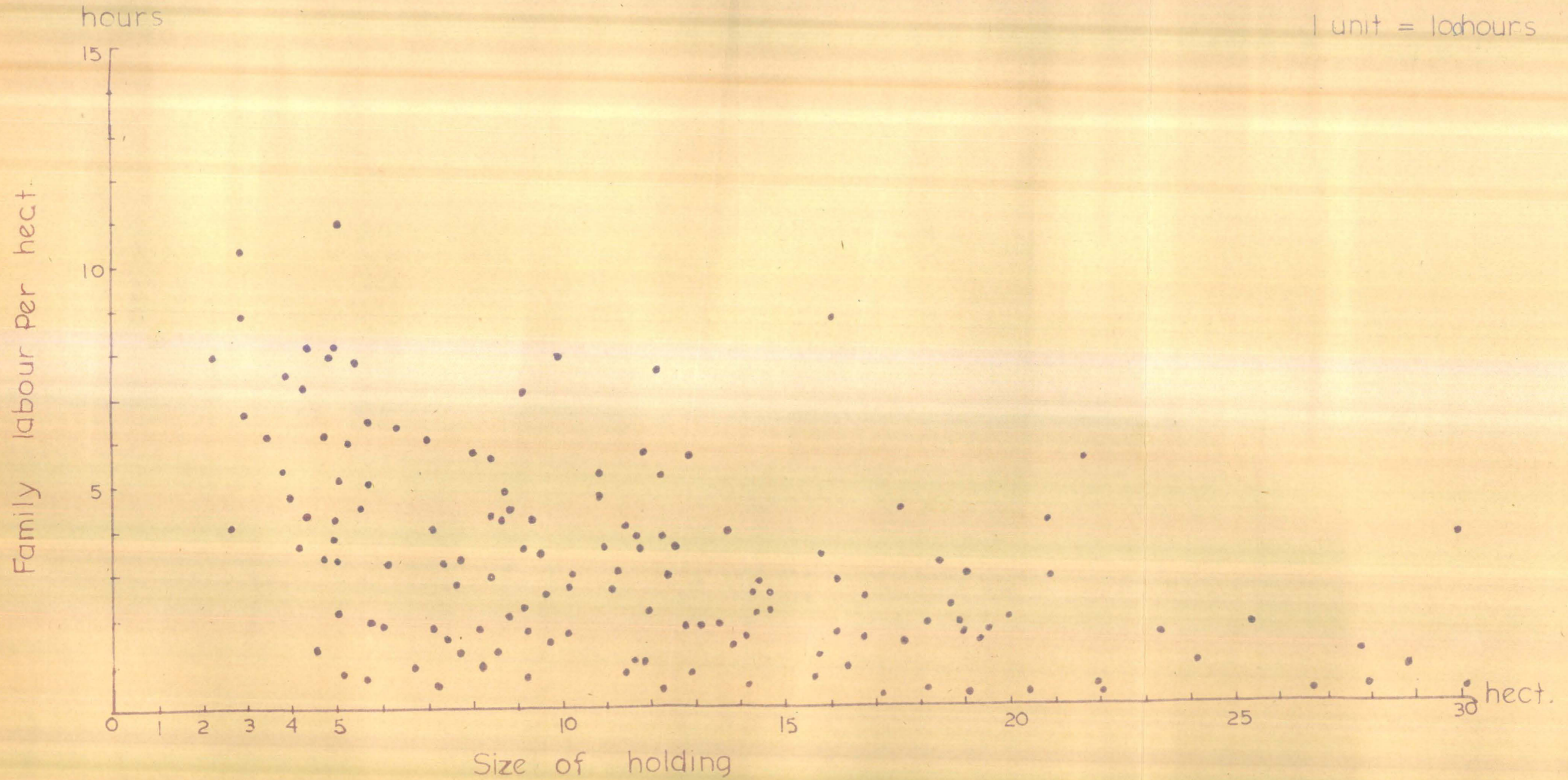


Fig-2.2

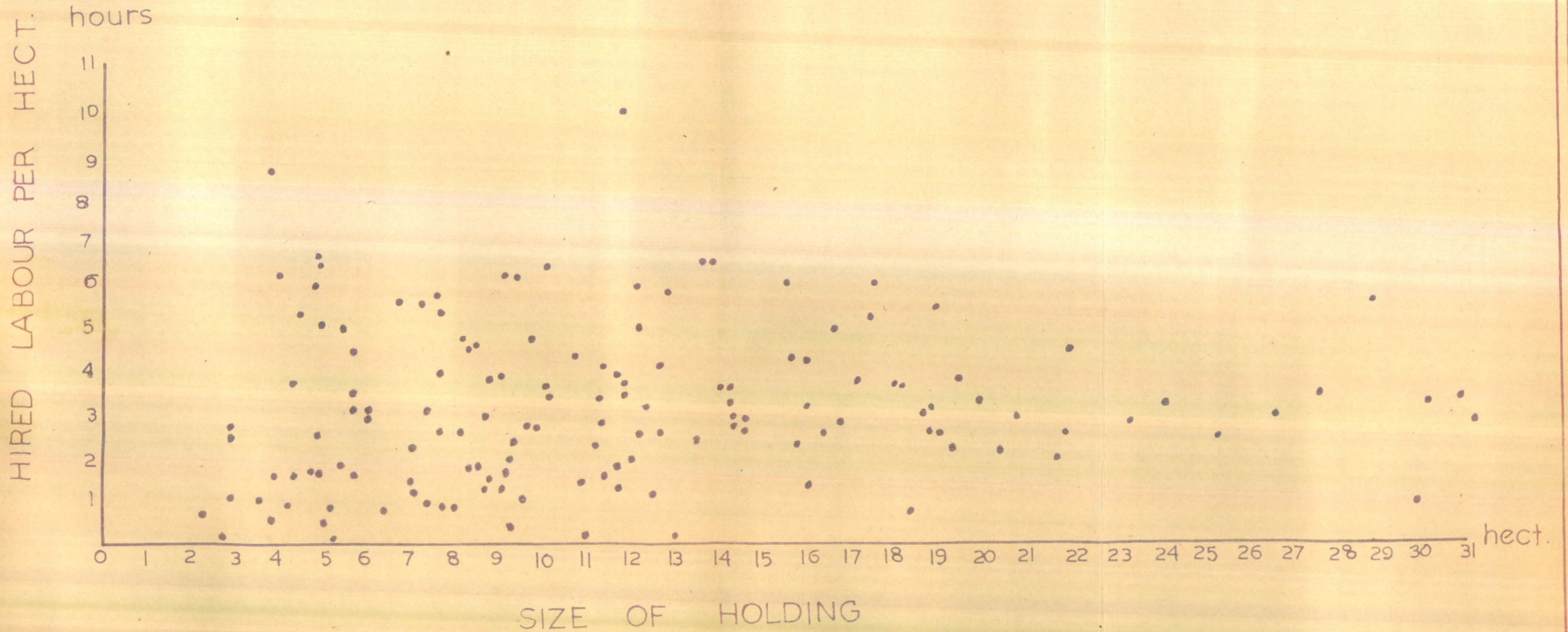
FMS, FERROZEPUR

1967-68

Scale:

1cm = 1hect.

1cm = 100hours





Fig, 2.3

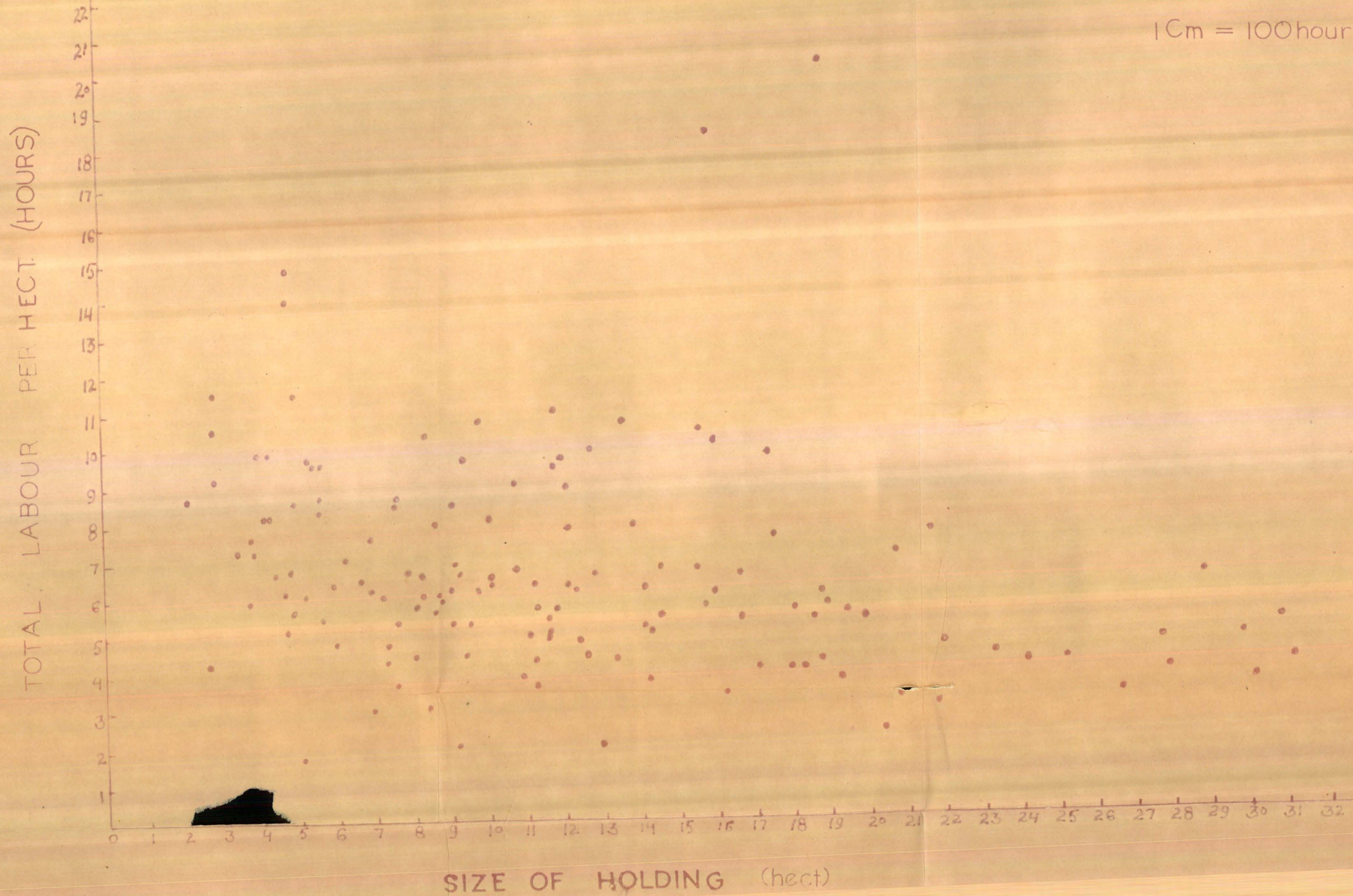
F. M. S, FERROZEPUR

1967-68

SCALE

1 Cm = 1 Hect.

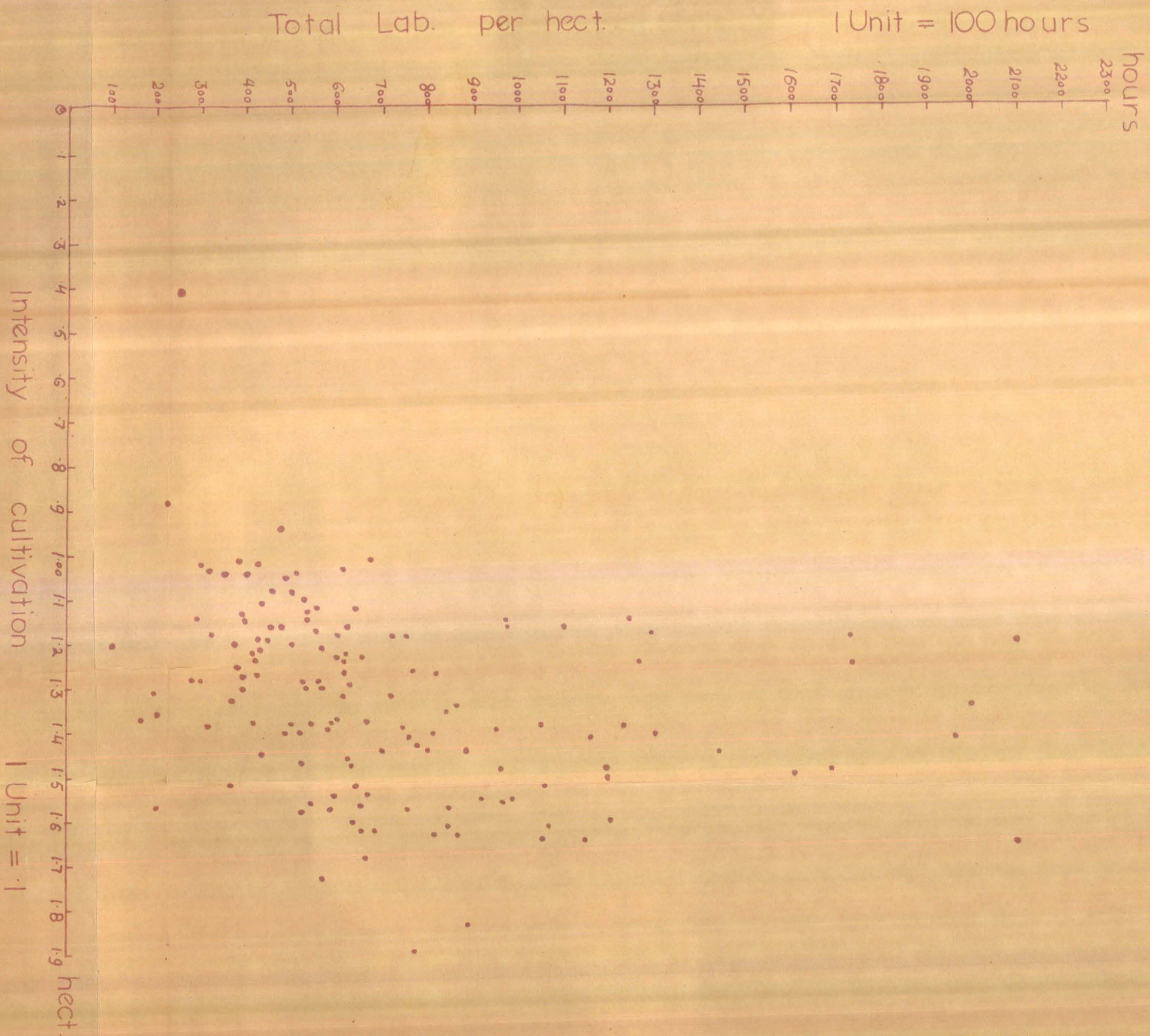
1 Cm = 100 hours



FIG, N.O.=2.4

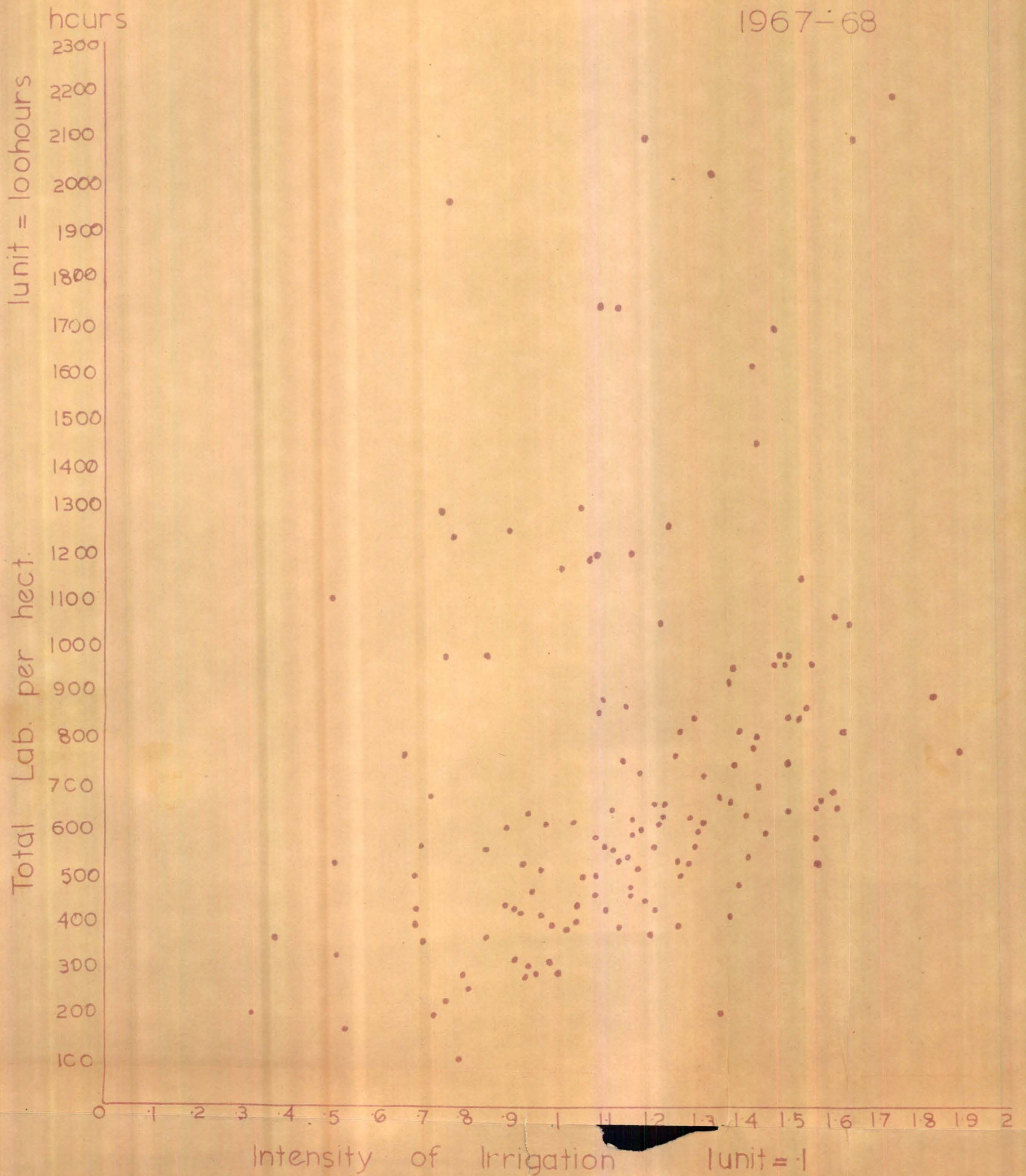
FMS, FERROZEPUR

1967-68



FMS, FERROZEPUR

1967-68





FIG, 2.7

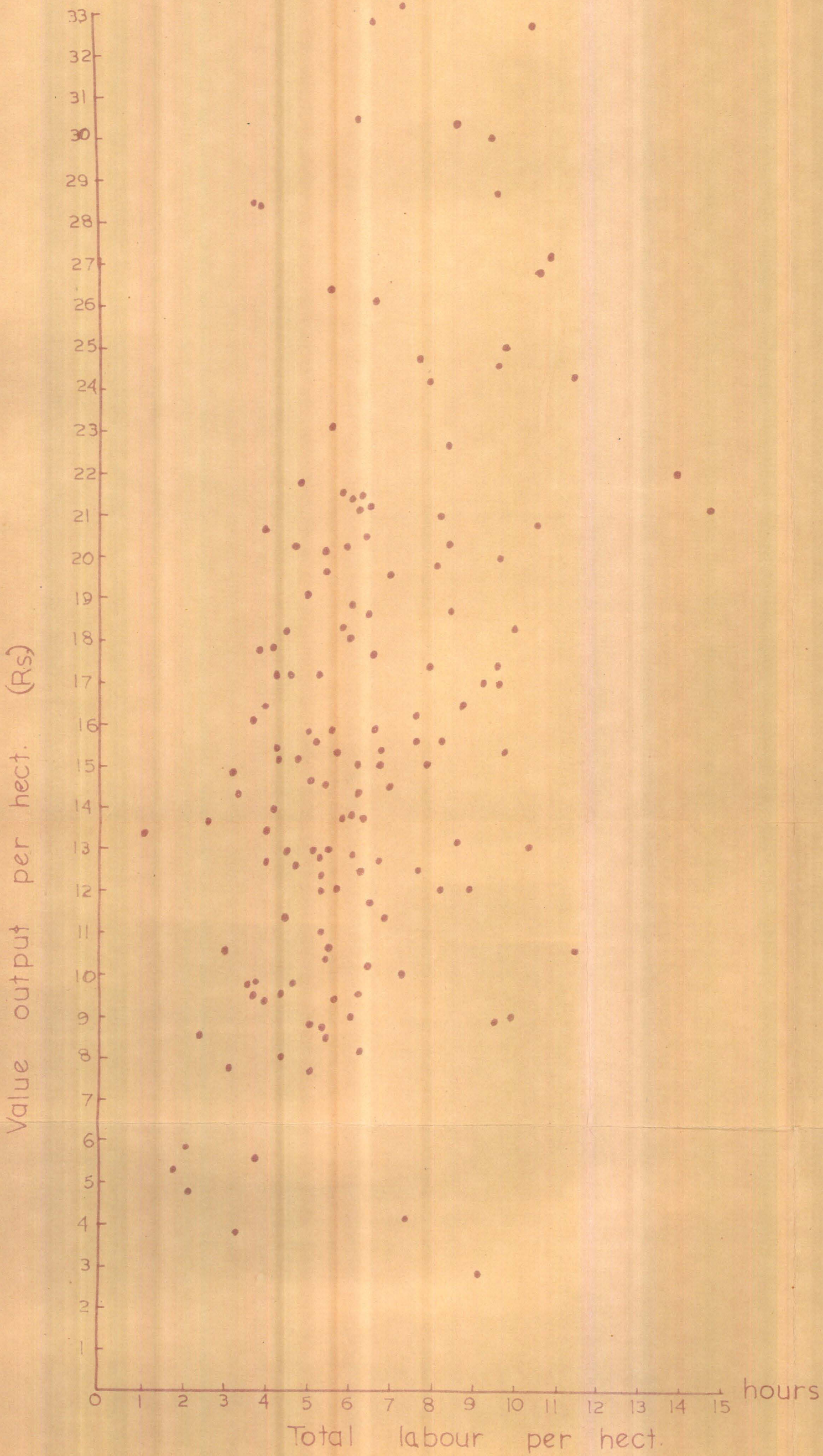
FMS, FERROZEPUR

1967-68

Scale:

1 Cm = 100 hours

1 Cm = 100 Rs.



utilisation of family labour per hectare on smaller farms is to be attributable to the greater availability of male adult earners per hectare (see 2.9 above) or to its intensive use made by the smaller holders or both. In order to make any definite conclusion in this regard, it is essential to have data on all aspects of labour use on the farm. Amount of family labour used per adult earner, in that case, would give us an idea of the differential labour input made by a family male adult earner in different size-classes of holdings. Due to the limitations we imposed on the scope of our present enquiry, we did not collect data on labour use other than on crop production and, therefore, are unable to make any conclusion on differential levels of total labour input by a male adult earner in different size classes of holdings. The data we have on intensity of utilisation of land and water resources can not be directly related to the family labour per hectare since the labour input in these activities is jointly made by family labour and the hired labour and, therefore, these farming activities can explain variations only in the total labour input per hectare. Though it is operationally difficult to disentangle the contribution in terms of labour time spent of family and hired labour to a particular farm operation, more direct data in this form is required to test whether a single male adult earner in a particular size group works more or less intensively. But given the limited nature of our data, we would attempt to calculate total labour input of a family male adult earner on crop production in different size groups. The higher utilisation of family labour per hectare on small sized holdings as we noted above, can be the product either of:

(1) the number of family farm workers per hectare on small-sized holdings being relatively higher than that on the larger farms, with the labour time input of a single worker being almost equal between different size groups, or

(2) the number of farm family workers per hectare in different size groups being almost equal, the labour-time input of a single family farm worker in small-sized holdings being relatively higher, or

(3) both i.e. the number of family farm workers per hectare as well as the amount of labour time input per family farm worker being higher on small-sized holdings than that for the bigger holdings.

We observed earlier (2.7 above) that the extent of employment of family female members and children on farm work being not very significant, crucial to the understanding of variations in family labour use between different size groups is the behaviour of the variable family male adult earners. Our data shows that the small holdings do have more male adult workers per hectare working on farm than that for the bigger holdings (see 2.9 above). Now the next question to see is: whether the labour time input of a single male adult worker varies over different farm size groups. Since our data does not give information separately on the labour time input of family males, females and children in a single household, and in stead, clubs them together under one heading: total family labour, we faced the problem of how to calculate the labour time input of a family male adult earner. In order to remove the difficulty presented by inclusion of family female labour and child

labour input in the total family labour, we excluded from our exercise all those holdings which reported the employment of family females and children on farm work. For the remaining households, it was a simple exercise of dividing the total family labour utilised by a single household, by the number of family male earners in it, in order to calculate the labour time input of a family male earner in a household. Table 2.20 below gives the figures on average labour time input of a family male adult earner per household on crop production for different size groups for the years 1967-68, 1968-69 and 1969-70.

TABLE 2.20

Average annual labour time input of a family male adult earner per household on crop production (size group wise) 1967-68, 1968-69, 1969-70.

Size group (hectares)	1967-68	1968-69	1969-70
0-5	2094.61	1504.86	1663.81
5-10	1614.20	1790.74	2279.63
10-15	1955.67	1692.35	1845.41
15-20	1671.12	1726.17	2184.67
20-25	1008.40	1493.24	1220.67
25 and above	1183.13	830.63	1152.10
Total:	1189.31	1627.71	1934.26

We find that though the labour time input of a family male adult earner does not vary systematically between the small and middle sized holding groups, it declines consistently for the top bigger sized holdings groups (i.e. 20-25 hectares and 25 hectare



and above). For the year 1967-68 and 1968-69, the labour-time input of a family male adult earner in the smallest holding-size group 0-5 hectares, is almost twice than that in the biggest holding size-group i.e. 25 hectares and above. For the year 1968-70, the figure is substantially high for the smallest holding size group as compared to the biggest size group. We thus see that small cultivators have not only more male adult earners per hectare on farm work, but they also spend more labour time on crop production. The big land holders with better economic status, learn to enjoy the comfort of leisure and holiday; they reduce their hours of daily work on fatiguing operations of crop production.<sup>8</sup>

#### 2.11 Utilisation of hired labour per hectare (size group wise)

In order to see the relationship between the size of holding and hired labour per hectare, we plotted the data on to graphs for the two variables. Fig. 2.2 represents the plotted data

8. Sharma (1966) in a three years study (1958-59, 59-60, 60-61) of 101 holdings in a Bhatinda block of Bhatinda District (Punjab) showed that "as farm size increases the employment of man-power for productive purposes decreases and for unproductive purposes increases." But, unfortunately, by clubbing together family farm worker and hired permanent worker under one heading: permanent farm worker, Sharma's study could not show this trend separately for family farm worker and hired permanent worker. For our results on labour time input per hired permanent worker on different size groups, see below (Table 2.29). Sharma attributed the spending of more labour time on unproductive purposes by bigger farmers to their "relatively more involvement in socio-political affairs".

A.C. Sharma, 'Man Power Requirements on Punjab Farms', Man Power Journal, Oct. 1965 - March 1966, P. 244-55.

for the year 1967-68. The trend reflected was the same for years 1968-69 and 1969-70. For all the three years, the scatter of points showed that points tend to cluster around on inverted U - shaped curve. It implies that hired labour per hectare tends to rise from a lower scale as the size of holding increases and again tends to fall down with the further increase in the size of holding .

Table 2.21 below gives the average values of hired labour per hectare for each size group. It confirms the trend observed from the Fig. 2.2 and scatter diagrams for the year 1968-69, 1969-70.

TABLE 2.21

Average hired labour per hectare (size group wise)  
1967-68, 1968-69, 1969-70.

Size group (hectares)	<u>Hired labour per hectare(hours)</u>		
	1967-68	1968-69	1969-70
0-5	257.04	206.38	286.48
5-10	286.26	299.35	315.19
10-15	346.22	321.35	402.36
15-20	351.57	318.76	374.77
20-25	256.63	285.29	304.17
25 & above	292.63	315.70	336.92
Total:	306.00	295.12	338.83

A significant consistency is observable in the utilisation of hired labour per hectare by different size-groups of holdings for all the three years. Hired labour utilised per hectare is higher for the middle sized groups (10-15 and 15-20) than that either for the small sized groups (0-5, 5-10) or for the big sized groups

(20-25 and 25 and above). Since this trend is observable for all the three years, its significance cannot be ignored. Though, given the limited scope of our work, we did not go into the detailed examination of the causes that would explain this phenomenon, the following explanation does not seem to be too implausible:

Small sized farmers even till the late 60's (for the period under study) were performing the agricultural operations more or less with traditional technology like wooden or iron plough driven with bullocks, Persian wheel irrigation and harvesting with manual labour.<sup>9</sup> In other words, the extent of use of modern labour displacing implements was low. In certain peak seasons of agricultural work, a minimum necessary amount of employment of hired labour was inevitable though the utilisation of family labour per hectare by these farms is the highest of all the other size groups (see Table 2.19 above). The total employment of hired labour in the whole year was relatively low so that per hectare average also comes out to be relatively lower. Middle sized farms (here it means farms in the 10-15, 15-20 hectares size groups) were relatively less mechanised.

9. Though, because of the different stratification of holdings into size-groups, the following results in Table A from the F.M. study can not be exactly used for confirming our arguments, the trend reflected does verify the point made by us.

TABLE-A

No. of Persian Wheels, 1967-68, 1968-69, 1969-70 (size-group wise)

Size group (hectares)	Persian Wheels (No.)		
	1967-68	1968-69,	1969-70
Below 6	13	13	13
6-9	6	14	15
9-14	16	12	11
14-24	14	11	9
24 and above	--	3	5
Total	49	53	53

Source: A.S. Kahlon et. al, Studies in Economics of Farm Management, Ferozepur District (Punjab), Three-Years consolidated report, Punjab Agricultural University, Ludhiana, 1967-68, 69-69, 69-70. p. 79. Contd.

They had tube-well irrigation,<sup>10</sup> use of fertilizer-pesticides, HYV seeds<sup>11</sup> but not much of tractors, threshers, harvester-combines,

9. contd.....

Except for the year 1967-68, the number of Persian Wheels tends to decrease with the increase in holding size-and this number is relatively greater in the small sized holding groups (0-6, 6-9). The inverse trend would have become more marked if the number of wheels per hectare was calculated for each size-group.

TABLE-B

No. of bullocks per hectare (size group wise)

Size group (hectares)	<u>No. of bullocks per hectare.</u>		
	1967-68	1968-69	1969-70
Below 6	0.5	0.5	0.5
6-9	0.3	0.3	0.4
9-14	0.3	0.3	0.3
14-24	0.2	0.2	0.2
24 and above	0.1	0.1	0.1

Source: A.S. Khalon et. al, op. cit. Report for 1967-68(p.78), for 1968-69 (p.55) for 1969-70 (p.68).

10. Table C gives data on use of tubewells and pumping sets by various size-groups of cultivating households.

TABLE-C

Size group (hectares)	<u>Tubewells and Pumping sets (No.)</u>		
	1967-68	1968-69	1969-70
Below 6	13	19	19
6-9	9	16	24
9-14	19	24	26
14-24	21	32	35
24 and above	7	7	11
Total:	69	98	115

Source: A.S. Kahlon, et. al, loc. ct. p. 79. From the Table C, it is evident that though the use of tubewells and pumping sets is spread over all categories of holdings, it is more concentrated in the categories 9-14 and 14-24 of which our middle size-groups 10-15 and 15-20 are a part.

11. Data on use of fertilizers, insecticides and HYV seeds were not given size-groups wise in the Studies .....loc ct.

corn-shellors, sprayers and dusters etc.<sup>12</sup> They, in other words, had introduced labour using technology and had made use of labour use increasing biological inputs<sup>13</sup> but not much of labour displacing

12. Table D gives us the figures on use of these implements by different size groups.

TABLE-D

Distribution of tractors, power threshers, corn-shellors and sprayers and dusters (size group wise) (1968-69, 1969-70).

Size group (hectares)	Tractors (No.)		Power threshers (No.)		Corn-shellors (No.)		Sprayers & dusters (No.)	
	1968-69	1969-70	1968-69	1969-70	1968-69	1969-70	1968-69	1969-70
Below 6	—	—	4	4	—	—	—	—
6-9	3	3	5	10	—	—	—	—
9-14	5	7	7	11	3	3	1	2
14-24	11	17	14	20	—	3	1	4
24 and above	9	12	4	6	2	2	2	4
Total:	28	39	34	51	5	8	4	10

Source: A.S. Kahlon, et. al, Studies p. 76. Data for 1967-68 and on harvester combines was not available. May be the introduction of harvest combines by 1970 was not much.

It is evident from Table D that use of tractors, Power threshers and especially corn shellors and sprayers and dusters was more concentrated in the bigger size categories. It is quite possible that if the category 14-24 hectares was split into our two categories 10-15 and 15-20 hectares, the inverse trend would be more marked and the number for these middle categories would be still less.

13. A study by Lahiri (1970) shows that the introduction of HYVP increases the demand for hired labour. R.K. Lahiri, "Impact of HYVP on Rural labour Market," EPW, Sep. 26, 1970. S.S. Johl and A.S. Lalon, in a study of some farms of small, medium and large size in Pakhowal Development Block of Ludhiana District found that the use of improved techniques of production (by which they meant 'recommended inputs such as fertilizer, insect and pest control improved seed, enhanced irrigation facilities etc. and not labour saving devices, such as introduction of improved implements and mechanisation') increases labour utilisation on all size classes of holdings. They also suggested that mechanisation on large farms was imperatively needed in order to reduce the excess demand for labour on large farms in peak periods. S.S. Johl and A.S. Kahlon, "Labour Utilisation Patterns and Employment Potentials of Punjab Farms: A Case Study", Indian Journal of Agricultural Economics, Jan. - March, 1966, p. 77-83.

machinery. As a result, their dependence on hired labour is still high so that its per hectare average also comes out to be high. Big sized farms on the other hand are highly mechanised. The use of labour displacing technology like tractors, harvester combines etc. by them reduced their demand for hired labour. Further, with the introduction of mechanisation in agricultural operations, a trend towards self-cultivation may have increased among the big farmers. Big farmers can also exercise economies of scale in labour use in certain agricultural operations like irrigation and especially in canal irrigation which is the main source of irrigation in the cotton belt (Zone III) of Ferozepur district. Capital intensification in agriculture might have increased the labour productivity so that now less manual labour was needed to complete the same amount of work. As a combination of all these factors, the level of hired labour employment on these farms fell down so that per hectare average comes to be low as compared to that for the middle sized farms and is almost equal to that for the small sized farms. Secondly, though the middle sized farms do not own tractors and its auxiliary implements, they do hire such implements. Hiring in of tractor is generally accompanied by hiring in of the services of a driver. Some complementarity between tractor hiring and labour hiring, thus pushes up the total utilisation of hired labour by middle sized farms. Small sized farms on the other hand, do not have the resources even to hire tractor services and on large farms it is generally the family members who drive the machine.

Though our explanation in terms of differential levels

of mechanisation among different size groups and its impact on labour use, has some evidence,<sup>14</sup> the subject requires much more detailed research to make definitive conclusions.

Now let us see what is the behaviour of the components of hired labour viz. casual labour and permanent labour<sup>15</sup> over different size groups.

2.12 Utilisation of casual and permanent labour per hectare (size-group wise).

Table 2.22 below shows the variations in casual labour per hectare used in different size groups.

14. That small farms are relatively more dependent on traditional technology and large farms on more modern technology is borne out by the following data in Table E.

TABLE-E

Investment in traditional and improved implements per hectare in different size-groups (Average of three years 1967-68, 1968-69, 1969-70).

Size group (hectares)	Improved Implements per hectare (Rs.)	Traditional Implements per hectare (Rs.)
Below 6	119.39	55.13
6-9	193.00	47.22
9-14	266.28	53.95
14-24	414.05	41.86
24 and above	409.85	16.53

Source: A.S, Kahlon, op. cit, p. 75

It is clear from the Table E that investment on traditional implements per hectare tends to decline and that on improved implements per hectare tends to rise with the increase in the holding size.

15. For the meaning of the category 'permanent labour' being used in a specific sense here, see our Chapter 1.

TABLE 2.22

Average input of casual labour per hectare (size group wise)  
(1967-68, 1968-69, 1969-70).

Size group (hectares)	<u>Casual labour input per hectare (hours)</u>		
	1967-68	1968-69	1969-70
0-5	151.33(22)	123.83(20)	191.13(22)
5-10	152.37(47)	130.01(52)	147.60(54)
10-15	142.74(37)	118.64(34)	155.27(28)
15-20	152.26(23)	140.00(24)	158.09(26)
20-25	133.23(12)	151.46(10)	141.45(13)
Total:	147.31(140)	129.78(147)	155.88(149)

Note: (Figures in the brackets indicate the number of holdings in each category which reported employment of casual labour). A look at Table 2.22 reveals that there does not seem to be any significant variations in the use of casual labour per hectare over different size groups. Another significant feature discernible from Table 2.22 is that the use of casual labour is widely dispersed over all size-groups of holdings. Only one household in the category 0-5 hectares size group for the years 1967-68 and 1969-70 (though this household was not the same in two years) did not report any use of hired labour-casual or permanent. In 1968-69, one household in 0-5 hectares size group and one in the 15-20 hectares size group did not hire any form of labour. Another household in the 15-20 hectare size group had only one child hired on permanent basis. Such households as employed no form of hired labour were different in different years and, hence, there was not even one



single household which consistently showed absence of hired labour use in all the three years of study.

In order to make comparison between the use of casual labour per hectare and permanent labour per hectare over different size groups, we computed the corresponding values for those households which employ both types of hired labour. Table 2.23 below gives the relevant figures.

Looking at columns 3, 6 and 9 in Table 2.23, we can notice that input of permanent labour per hectare declines consistently as the holding size moves up. Therefore the variations in the use of permanent labour are much more marked than the variations in the use of casual labour per hectare over different size groups of holdings for those households who employ both the types of hired labour. Also, the permanent labour input per hectare, in such households, for each size group is greater than the corresponding casual labour input per hectare. The Table 2.24 below gives the percentage-wise break up of households in each category which employ permanent male adult servants. All these households, except one as reported in Table 2.23, also reported employment of casual labour. It is clear from the Table 2.24 that the proportion of households in a size group employing permanent servants goes up as the size group moves up. For the category 0-5 hectares, around 1/4th to 1/5th of the total households in the category employ permanent labour. For the next size group 5-10 hectares, more than half of the households employ permanent labour. The percentage moves up to around 80 for the middle sized categories i.e. 10-15 & 15-20 hectares and it is around 100 for the top big-sized categories. The

TABLE 2.23

Average values of permanent labour per hectare and casual labour per hectare in households employing both the types of hired labour (size-group wise), 1967-68, 1968-69, 1969-70.

Size group (hectares)	1967-68			1968-69			1969-70		
	No. of households.	Permanent labour per hectare (hours)	Casual labour per hectare (hours)	No. of house- holds	Permanent labour per hectare (hours)	Casual labour per hectare (hours)	No. of house- holds.	Permanent labour per hectare (hours)	Casual labour per hectare (hours)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0-5	6	432.62	167.47	6	350.19	148.17	5	461.71	113.38
5-10	24	257.85	144.87	32	275.81	139.99	29	313.50	149.12
10-15	29	256.59	135.88	27*	247.43	120.59	25	277.99	150.90
15-20	20	229.74	150.45	20+	228.84	143.73	21	268.62	176.74
20-25	6	161.81	138.62	5	208.87	141.77	6	178.92	112.15
25 and above	11	160.27	151.27	10	174.71	141.46	12	214.56	145.84
Total	96	245.45	145.07	100	249.55	136.22	98	282.02	151.01

\*One household in this category reported hiring of only 1 child as permanent servant, Being an exceptional case, it was discarded for the purpose of calculation here.

+One household in this category reported hiring of only permanent labour (one male adult). In order to retain consistency in comparison, the household was not included in calculating the average value of permanent labour per hectare either for the size group or for the total sample.

TABLE 2.24

Number and percentage of households employing permanent male adult servants (1967-68, 1968-69, 1969-70).

Size-group (hectares)	1967			1968			1969		
	Total no. of households.	No. of households employing perma- nent servants	% of house- holds emp- loying per- manent servants.	Total No. of house- holds.	No. of house- holds employ- ing permanent servants:	% of house- holds emp- loying per- manent servants.	Total No. of house- holds.	No. of house- holds employ- ing permanent servants.	% of house- holds empl- oying per- manent servants.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0-5	23	6	26.09	21	6	28.57	23	5	21.73
5-10	47	24	51.06	52	32	61.53	54	29	53.70
10-15	37	29	78.38	34	27	79.41	28	25	89.28
15-20	23	20	86.96	26	21	80.77	26	21	80.76
20-25	8	6	75.00	7	5	71.42	6	6	100.00
25 and above	12	11	91.67	10	10	100.00	13	12	92.30
Total:	150.00	96	64.00	150.00	101	66.66	150.	98	65.33

relatively sharp fluctuations in percentage for the 20-25 size group are due to relatively small number of households in the size-group. We thus notice that though the phenomenon of hiring labour on a permanent basis is common to all size classes of cultivators, it is more widely prevalent in the middle and bigger sized holdings. Also, the number of permanent servants (on an average) a farming household employs varies markedly between different size groups. From the Table 2.25 below, it is clear that the number of permanently employed servants (on an average) varies positively with the size of holding.

TABLE-2.25

Average no. of adult male permanent servants per household (size group wise) 1967-68, 1968-69, 1969-70.

Size group (hectares)	<u>No. of adult male permanent servants per household.</u>		
	1967-68	1968-69	1969-70
0-5	1	1.17	1
5-10	1.25	1.16	1.31
10-15	1.65	1.63	1.76
15-20	1.85	1.86	2.14
20-25	1.83	2.20	1.83
25 and above	3.27	3.80	4.08
Total	1.75	1.74	1.96

The tendency of inverse relationship between the number of permanent servants employed per household and the size of holding becomes more clear if we look at Tables 2.26, 2.27, 2.28 which give the frequency distribution of households in each size-group according to the number of permanent servants employed per household for the year 1967-68, 1968-69, 1969-70 respectively.

TABLE 2.26

Frequency distribution of households according to the no. of permanent farm servants per household (size-group wise) 1967-68.

Size group (hectares)	No. of permanent farm servants					Total no. of households employing permanent servants
	1	2	3	4	More than 4	
0-5	6	0	0	0	0	6
5-10	18	6	0	0	0	24
10-15	14	11	4	0	0	29
15-20	8	8	3	1	0	20
20-25	2	2	1	1	0	6
25 and above	1	5	3	0	2*	11
<b>Total:</b>	<b>49</b>	<b>32</b>	<b>11</b>	<b>2</b>	<b>2</b>	<b>96</b>

\*One household employed 9 permanent servants, another 7.

TABLE-2.27

Frequency distribution of households according to the no. of permanent farm servants (size groupwise) 1968-69

Size group (hectares)	No. of permanent farm servants:					Total no. of households employing permanent farm servants.
	1	2	3	4	More than 4	
0-5	5	1	0	0	0	6
5-10	28	3	1	0	0	32
10-15	12	13	2	0	0	27
15-20	8	12	0	0	1*	21
20-25	1	2	2	0	0	5
25 & above	0	2	3	3	2+	10
<b>Total:</b>	<b>54</b>	<b>33</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>101</b>

\*One household reported hiring of 7 permanent farm servants

+One household reported hiring of 6 permanent farm servants and another 7.

TABLE 2.28

Frequency distribution of households according to the no. of permanent farm servants per household (size group wise) 1969-70.

Size group (hectares)	No. of permanent farm servants					Total no. of households employing permanent servants.
	1	2	3	4	More than 4	
0-5	5	0	0	0	0	5
5-10	21	7	1	0	0	29
10-15	7	17	1	0	0	25
15-20	7	7	5	1	1*	21
20-25	3	2	0	1	0	6
25 and above	0	3	4	2	3+	12
Total:	43	36	11	4	4	98

\*One household employed 5 permanent farm servants.

+One household employed 6, another 8 and still another 9 permanent farm servants.

From the Tables 2.26, 2.27, 2.28, we observe that majority of the households in the all the size groups, except the biggest one i.e. 25 hectares and above, employ either 1 or 2 permanent servants. The phenomenon of employment of 3 permanent farm servants per household is limited to a few farming families in the middle and bigger holding size groups. Except in the top category, the phenomenon of employing four or more than four permanent farm servants per household is rare. But despite the small number of farm servants per household in the smaller size groups, the per hectare input of permanent labour in the smaller size groups is higher than that in the middle and bigger holding size groups.

(see columns 3, 6, 9 in Tables 2.23 above). We also noted above that the input per hectare of permanent labour is higher than that of casual labour for all the size groups for all the three years 1967-68, 1968-69 and 1969-70. (Table 2.23) for all those households who employ both the forms of hired labour. In other words, the households which employ both the forms of hired labour, are more dependent on permanent labour than that on casual labour. The over all percentage of households employing both the forms of hired labour varies around 65% for three years of study. (Table 2.24) This reveals that despite significant advances made in the mechanisation of agriculture by the late sixties, the phenomenon of permanently hired labour is still very important for the agrarian economy of Ferozpur district.<sup>16</sup>

The question whether this is indicative of bondedness of agricultural labour in Punjab, can not be answered definitively with the kind of data available to us. We have, however, argued in Chapter 1 on the basis of some direct and indirect data we could get, that hiring of labour on permanent basis in Punjab, on the contrary, is reflective of the higher bargaining power the agricultural labour has gained in the wake of labour use increasing effects of the Green Revolution. But more direct level data in the form of written or oral labour contracts giving information on the duration of contract, mode of payment, the nature of advance loan payments, the form and rate of interest charged on that, if any, and penalty for breaking the contract etc., is required for a more concrete analysis of this very important aspect of employer-labourer relationship in Punjab

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16. Undoubtedly, as we showed above, the phenomenon of casual labour employment is more widely spread among all size classes of holdings.

agriculture. Such labour contract documents, being the personal copies of the land holders are generally difficult to get. We have appended three specimens of such documents, we could get, in the Appendix 2, 3 and 4. The aim of FMS not being confined to the study of pattern of labour utilisation, the data collected for the study is inadequate for examination of such detailed aspects of labour utilisation some of which we outlined above. An independent enquiry with a specific focus on this question can only unravel the various forms of contracts on labour employment.

Having thus noticed that the phenomenon of hiring labour on a permanent basis is common to all size classes of holdings though with significant variations in terms of the percentage of households within a size group employing permanently hired labour and also in terms of the number of workers hired permanently (on an average) by a household belonging to different size classes of holdings, we thought it is important to see whether there are variations in the levels of total annual labour input of a permanent servant over different size classes of holdings. Given the complex net work of relations of social power, domination and dependence between different segments of rural society we would a priori tend to believe that it will be the socially and economically more powerful bigger sized holdings that are able to extract more labour input from a permanent farm servant.<sup>17</sup> Our evidence on this, on the contrary, does not show

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17. By this, we are not suggesting a one-to-one correspondence between socio-economic power of a rural household and the size of land under its cultivation. Though in a concrete situation, specific variations in determinants of social power may be identified, land remains undoubtedly, the single most important factor determining the economic status and social power of a rural household.



any consistent trend.

Table 2.29 below gives the figures on total annual labour time input of a permanent labour per household in different size classes of holdings. Since in the form of data available to us, different entries in terms of labour input of a male adult permanent labour and a child permanent labour were not given, we were presented with a difficulty of separating out the labour input of a male adult permanent servant. We, therefore, excluded such households from our calculation which reported employment of child labour on permanent basis.<sup>18</sup> For the remaining households, the labour-input of a permanent labour per household was calculated by dividing the total labour time input under the heading permanent labour by the number of permanent labourers in a household.

TABLE 2.29

Average annual labour-time input of a male adult permanent servant(hours)(size group wise)1967-68, 1968-69, 1969-70

Size group (hectares)	<u>Annual labour time input of a male adult permanent servant (hours).</u>		
	1967-68	1968-69	1969-70
0-5	2030.83	1215.25	1939.60
5-10	1705.29	1744.38	2016.22
10-15	2041.62	1888.71	1926.70
15-20	2300.21	2263.52	2340.47
20-25	2086.86	2228.90	2121.50
25 and above	2283.91	1783.22	2094.65
Total	1935.55	1883.49	2075.61

18.The employment of female labour on permanent basis is reported to be nil for all the three years. Though female labour on fixed annual or monthly wages (cash and/or kind) is employed for sweeping the courtyard and animal shed, phenomenon of female labour employment on permanent basis on crop production is completely absent in the region under study and as far as our information goes, it is true of the whole state of Punjab.

From the Table 2.29, we can observe that except for the year 1968-69, where the labour time input of a permanent farm servant is relatively very low for the 0-5 size-group, no systematic relation between the labour time-input of a permanent farm servant and the size of holding emerges. This has an important implication that the amount of labour-time a permanent labourer puts in a year, is determined independently of the economic status of his employer. But it should be kept in mind that our data and conclusions therefore refer to labour time input on crop production only. Different proportions of labour time input by a permanent servant on crop production, cattle maintenance and social and family affairs may emerge over different size groups of holdings, if data on these items were also investigated. And secondly, any conclusion about the variations in the levels of total employment of a permanent servant over different size groups can only be made if data on these items were also investigated.

Though not exactly comparable because of the different set of households in the lower and middle sized categories for the two items, interesting features emerge if we compare the annual labour time input of a permanent servant and a family male adult earner per household over different size groups (see Table 2.20 and 2.29). Compared to the annual labour-time input of a permanent servant, it is only in holding size groups 0-5 hectares in 1967-68, 0-5 hectares and 5-10 hectares in 1968-69 and 5-10 hectares in 1969-70, that we find the family male adult earner putting in more annual labour-time. Except these categories in the lower sized groups, the permanent servant, our data shows, puts in more labour time input on crop production than does the family male adult earner. Labour-time input of a family male

adult earner in the category 20-25 hectare, is substantially lower than that of a permanent servant in this category. For the biggest holding size groups 25 hectares and above, a family male adult earner does not put in even half the labour time of a permanent servant in the same category. Our data being limited only to labour use on crop production, though we cannot say anything on the total level of employment of family and hired permanent workers on different size-groups, it is clear nonetheless, that the family workers of small sized holdings work much more intensively on crop production than do the family workers of larger holdings.

Having discussed in sufficient detail, the behaviour of the components of hired labour and family labour over different size groups, let us now see the behaviour of their aggregated variable: total labour used on crop production. As stated in the very beginning, the main focus of our enquiry in this chapter is to find out the relationship between variations in output per hectare and that in total labour used per hectare over different size-groups, the behaviour of this variable is therefore of prime interest to us.

#### 2.13 Utilisation of total labour per hectare (size group wise).

To see the relationship between size of holding and total labour per hectare, we plotted the data for these two variables. Fig. 2.3 represents the plotted data for the year 1967-68. The trend reflected for the years 1968-69 and 1969-70 was almost same. The scatter of points, for all the three years, revealed an inverse relationship between the size of holding and total labour per hectare. Table 2.29 below gives the average values of total labour per hectare for the different size groups of holdings.

TABLE 2.30

Average total labour per hectare(size group wise)  
1967-68, 1968-69, 1969-70.

Size group (hectares)	<u>Total labour per hectare (hours)</u>		
	1967-68	1968-69	1969-70
0-5	829.99	795.33	1029.35
5-10	635.27	698.48	773.54
10-15	621.17	637.41	647.29
15-20	562.14	538.53	650.08
20-25	434.01	435.15	438.17
25 and above	385.25	376.90	433.92
Total	618.61	636.88	724.94

The Table 2.30 confirms the trend observed from the scatter of points for the related variables. Total labour utilisation per hectare declines consistently as the holding size-group moves up to a higher range. Explanations of variations in total labour use per hectare by different size-groups of holdings can be sought in the different patterns of farming, if any, of different size groups. Though the question of differential levels of mechanisation on different size-groups of holdings is extremely important in explaining variations in total labour use per hectare by different size groups, we did not take up this aspect for our study. We felt much more detailed research work on this subject needs to be done, although a beginning has been made by the Punjab Agriculture University, Ludhiana. For our own study, we confined ourselves to the study of differences in the intensity of cultivation and intensity of irrigation over different size groups as possible explanatory variables for the variations in total labour use per hectare our different size groups. And as far as

mechanisation affects intensity of cultivation and intensity of irrigation, its effect on the variations in total labour use over different size groups will be expressed through these variables.

2.14 Variations in intensity of cultivation(size group wise).

In order to see the possible relationship between the size of holding and intensity of cultivation ( $\frac{\text{gross cropped area}}{\text{size of holding}}$ ), we plotted the data for these two variables. The scatter of points for all the three years 1967-68, 1968-69 and 1969-70. revealed a declining trend, though not very consistent and marked one, for the intensity of cultivation as the holding size increases. Table 2.31 below giving the average values for intensity of cultivation for different size groups confirms the trend observed from the plotted data.

TABLE 2.31

Size group (hectares)	<u>Average intensity of cultivation 1967-68, 1968-69, 1969-70.</u>		
	<u>Intensity of cultivation (no.)</u>		
	1967-68	1968-69	1969-70
0-5	1.42	1.51	1.47
5-10	1.36	1.35	1.40
10-15	1.35	1.30	1.30
15-20	1.36	1.33	1.39
20-25	1.19	1.05	1.01
25 and above	1.12	0.99	1.15
Total	1.34	1.32	1.35

Thus we observe a negative relationship though not very consistent between the size of holding and intensity of cultivations.<sup>19</sup> The higher

19. Our result is confirmed by the conclusion drawn by the Farm Management Study on the basis of statistical analysis, using the technique of analysis of variance. The conclusion drawn was that "the study showed that there existed a negative correlation between the size of holding and intensity of cropping". A.S. Kahlon et al, FMS Three Year Consolidated Report op. cit. p. 53.

labour use per hectare on smaller farms is, therefore, explainable partially due to the system of multiple cropping - more intensive than for the bigger holdings-resorted to by them. However, to see the relationship between labour use per hectare and intensity of cropping, we relate these variables directly to each other (see below 2.15).

2.15 Variations in intensity of irrigation.

In order to see the relationship between size of holding and intensity of irrigation (gross irrigated area), we plotted the (size of holding) data for the two variables on to the graphs. From the scatter of points for all the three years, we observed that the intensity of irrigation tended to decline, though not very consistently as the size of holding increases.<sup>20</sup> Table 2.32 below confirms our observation.

TABLE 2.32

Average intensity of irrigation (size group wise) 1967-68, 1968-69, 1969-70.

Size group (hectares)	Intensity of irrigation (No.)		
	1967-68	1968-69	1969-70
0-5	1.31	1.44	1.38
5-10	1.16	1.29	1.37
10-15	1.15	1.26	1.20
15-20	1.16	1.19	1.32
20-25	1.07	0.98	0.86
25 and above	1.04	0.98	0.97
Total	1.17	1.25	1.27

20. The F.M. Study did not use our concept of intensity of irrigation. As done in the study, dividing the gross irrigated area by gross cropped area, tends to eliminate the declining tendency of intensity of irrigation with respect to holding size since intensity of cultivation is negatively related to holding size. But even with FMS concept of intensity of irrigation, it had a slight declining tendency with respect to holding size though not significantly. And that corroborates our results also. See A.S. Kahlon et al FMS. Three-years Consolidated Report, op. cit. p. 40.

Small sized holdings resort to higher intensity of irrigation which requires greater application of human labour per hectare. However, to see the direct relationship between the intensity of irrigation and total labour per hectare, see 2.16 below.

2.16 Variations in total labour use per hectare (size group wise) and variations in intensity of cultivation and intensity of irrigation (size group wise)

We plotted the data for total labour utilised per hectare and the intensity of cultivation. Fig. 2.4 represents the data for year 1967-68. The scatter point diagram for the years 1968-69 and 1969-70 also revealed the same trend. Fig. 2.5 represents the data plotted for total labour utilised per hectare and intensity of irrigation, for the year 1967-68. The same trend was witnessed for the years 1968-69 and 1969-70. A clearly evident positive and direct relationship between total labour per hectare and intensity of cultivation on one hand and that between total labour per hectare and the intensity of irrigation on the other, was observable from the plotted data.

Thus we see that by resorting to higher degree of multiple cropping and greater use of irrigation resources, the small peasants tend to make the maximum use of their family and hired labour resources. Since as we showed above (2.11) the hired labour used per hectare by small farmers is not quantitatively greater than for bigger farmers, it is only the variations in the use of family labour per hectare which account for the variations in the use of total labour per hectare. We saw earlier (2.10 above) that relatively higher use of family labour per hectare by small farmers is attributable to both higher number of family male adult earners per hectare

working on farm as well as higher labour time input of a family male adult earner on farm work (see Table 2.18 and 2.20 above). Small farmers, thus faced with a higher labour-land ratio use both the inputs intensively. In fact, they are able to utilise their land and water resources more intensively only by over-consuming their own body-power. Some of them, who are either more enterprising<sup>21</sup> or economically hard pressed, defy the social customs and use their woman folk and children also on farm work. (See 2.5, 2.6 and 2.7 above). Big farmers, on the other hand, are rarely found employing their women and children on farm work. A lower number of their family male adults work on farms (see 2.4 above), the average number of male adult earners per hectare, therefore, comes to be relatively very low (see Table 2.18). And those of them who do work on the farms, put in less labour time—almost half less than the small farmer's input (Table 2.20) and spend more time on socio-political affairs.<sup>22</sup> They cultivate their relatively more fragmented holdings,<sup>23</sup> less intensively (see 2.14 above also) and irrigate also less intensively (see 2.15 above). Moreover, they do not compensate their relatively low availability of family labour per hectare by hiring in more labour per hectare than small farmers (see 2.11 above). But despite their higher intensive

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21. We gave the example of one such case in village Dhindsa, (see Chapter 1).

22. Sharma (1966), op. cit.

23. "The number of fragments had a positive relationship with the farm size". A.S. Kahlon, Three years consolidated Report, FMS, Ferozepur District, p. 42. Also see Table 4.4.



utilisation of their land, man and water resources, the smaller farmers were not able to generate higher output per hectare on their farms than could the bigger farmers. We would now discuss this aspect of variations in output per hectare over different size classes of holdings.

2.17 Variations in gross output per hectare (size group wise).

We plotted the data on size of holding and gross output per hectare on to the graphs. Fig. 2.6 represents the data for the year 1967-68. The scatter diagram for the years 1968-69 and 1969-70 also revealed the same trend. The scatter for all the three years does not show any systematic trend. Table 2.33 below shows the average level of output per hectare for each size class of holdings.

TABLE 2.33

Average output per hectare (size group wise).  
1967-68, 1968-69, 1969-70.

Size group (hectares)	Output per hectare (Rs.)		
	1967-68	1968-69	1969-70
0-5	1937.60	1667.26	2048.62
5-10	1804.42	1636.64	1996.03
10-15	1800.61	1523.24	1530.12
15-20	1988.52	1612.27	2091.25
20-25	1436.90	1226.24	1358.53
25 and above	1938.11	1758.24	1843.56
Total	1843.37	1599.95 <sup>24</sup>	1894.92

Though output per hectare tends to decline over the first three size groups for all the three years of study, the tendency is not consistently maintained. Output per hectare again rises for the 15-20 hectare

24. A sharp decline in average output per hectare (for the year 1968-69) was caused by lower yields of both rabi and kharif crops due to unfavourable weather conditions and relatively low rain fall in year 1968-69. A.S. Kahlon et. al Studies in the Economics of Farm Management Ferozepur District (Punjab), Report for the year 1968-69, p. 2-3.

size group, declines for the next size group and again rises for the biggest size group i.e. 25 hectares and above. Output per hectare is the lowest in the size group 20.25 hectares. The number of holdings in this size-group being relatively very small (see Table 2.4 above), no conclusion of any significance can be drawn from this weak tendency in the data. We also plotted the data zone-wise for all the three years and village wise for the year 1968-69 only. No graph showed any consistent relationship between the size of holding and output per hectare.

We thus conclude that there is no consistent relationship between size of holding and output per hectare.<sup>25</sup> We would now discuss the implications for the size productivity debate on the basis of our results on variations in output per hectare and labour use over different size groups of holdings

#### 2.16 Some implications for size productivity relationship.

Central to many explanations of inverse relationship between size of holding and output per hectare (observed in FMS studies of fifties) was the assumption of higher use of labour per unit of land. A.K. Sen (1962, 64) attempted a theoretical explanation of the phenomenon by positing a dual agrarian system of co-existence of family labour based peasant farming and hired labour based capitalist farming. The variations in labour use per hectare over farm size groups were explained in terms of conditions peculiar to each of these agrarian systems. In the family labour based farming system, it was argued, the family labour is used till its marginal productivity

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25. F.M.S. study using graphical and regression analysis also found unsystematic relationship between size of holding and output per hectare. See A.S. Kahloug, et. al, Report 1967-68 (p. 115) Report 1968-69 (p. 74) Report 1969-70 (p. 115).

is zero or is at least below the market wage rate and in the wage labour based capitalist farming system, the hired labour is used till its marginal productivity is equal to the market wage rate. Consequently, the total labour input in the family labour based farming system is over extended than it is in the wage labour based farming system. The higher output per unit of land in small family labour based farms, therefore, explained as a function of the higher labour input per unit of land. Such a neat division into system of family labour based farming and wage labour based capitalist farming is itself too stylistic<sup>27</sup> and open to criticism.<sup>28</sup> Dipak Mazumdar's<sup>29</sup> (1963) explanation of higher labour use on smaller farms in terms of lower marginal supply price of the family labour relative to the hired labour was also on the lines of Sen's arguments. The empirical investigations of A.M. Khusro (1964), C.H. Hanumantha Rao (1963, 66, 68), G.R. Saini (1969, 71, 72) and

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26. As N. Georgescu-Roegen's (1960) argument on higher labour input by small farms was based on the assumption of real labour cost of family labour being zero, it can be conceived of as a modified version, as Sen himself pointed out, of Sen's general model which assumed only a gap in the real labour costs of family labour in the peasant farms and that of hired labour in the capitalist farm. In Sen's model, marginal productivity of family labour need not be necessarily zero. See N. Georgescu-Roegen, "Economic Theory and Agrarian Economics," Oxford Economic Papers (OEP), February 1960, A.K. Sen, Peasants and Dualism with or without Surplus Labour, Journal of Political Economy, Oct. 1966, A.K. Sen, 'An Aspect of Indian Agriculture', The Economic Weekly, Annual No. Feb. 1962.

27. K. Bharadwaj, Production Conditions in Indian Agriculture, CUP, 1974, p. 20.

28. Our own empirical evidence on the basis of our sample data, refutes the positing of farmers so neatly into a set of family labour based farms and that of wage labour based farms. Out of a sample of 150 households, we found only 2 households in 1967-68, none in 1968-69 and 1969-70 to be purely wage labour based farms and only 1 household in 1967-68, 2 in 1968-69 and 1 in 1969-70 to be purely family labour based farms. A vast majority of the farms use both family labour and hired labour in different proportions. See Appendix 11.

29. Complete references provided in the bibliography.

G.S. Bhalla (1972) which found the relationship to be inverse, explained the higher output per unit of land on smaller farms in terms of greater use of labour input per unit of land. Our evidence, in this regard, though shows greater labour use per hectare by smaller farms (see 2.13 above), it does not lead to higher output per hectare on smaller farms and relationship between size of holding and output per hectare turns out to be non-systematic. Higher labour utilisation per hectare on smaller farms, therefore, does not result in higher output per hectare. In order to see the relationship between total labour utilisation and output per hectare, we plotted the data for the two variables on to graphs. Fig. 27 represents the data for 1967-68. The inconsistent trend-relationship between output per hectare and total labour utilised per hectare was also observed from the scatter diagrams for the years 1968-69 and 1969-70.

That despite higher levels of total and family labour input per hectare in smaller holdings, it does not result in corresponding higher level of output per hectare, shows that factors other than labour input are of more significance in causing variations in output per hectare of different holding size groups. That higher levels of intensity of cropping and intensity of irrigation (see 2.14 and 2.15 above) in small holding size groups do not produce corresponding higher yields per hectare further corroborate our conjecture. A possible explanation of this non-systematic relationship between farm size and output per hectare may be sought in the better agronomical methods followed by bigger farms in the wake of new farming techniques introduced since the mid sixties in

Punjab. This possible explanation gains more credence if seen in the light of results of an earlier study of the same area conducted in 1954-55, 55-56, 56-57 under FMS schemes, when an inverse relationship between size of holding and output per hectare was observed. A possible explanation of weakening of this relationship by the end of 60's can be suggested on these lines: In the early fifties, when the farming techniques were almost uniform and homogeneous to all classes of farming sizes, the mere availability of more family labour per hectare exclusively in the case of small farms was able towards contributing in raising their output per hectare. In contrast to this situation, in late sixties this earlier exclusive advantage of the small farmers has been mitigated and neutralised by better farming techniques (better seeds, more fertilizer-pesticides inputs, deep tilling of land by tractor, levelling of land contributing to better returns from irrigation, timing in agricultural operations, help from the state agencies in rendering technical services) which are relatively exclusive to the bigger farms. As a result, bigger farms have been able to raise their output per unit of land. Verification of this possible explanation can, nevertheless, be made only by further empirical research on these aspects.

Our results on trends of output and labour inputs over different size classes of holdings, lead us to believe that inverse relationship between size of holding and output per hectare, holds only in a backward stagnant agriculture. The explanation of higher output per hectare in terms of higher labour input per hectare, merely

describes a static situation of such a backward agriculture.<sup>30</sup> To overlook this transitory character of the so-called inverse relationship found in FM and some other studies, without relating it to the specific mode of production, leads to making spurious generalisations about the higher productive efficiency of small farmers or tenant peasant farming.<sup>31</sup> The policy conclusions drawn from such generalisations were of various hues - some argued, at one time, for land reform measures aimed at redistribution of land into small holdings,<sup>32</sup> at another time, for continuation of the share cropping landlord system,<sup>33</sup> some others argued for supporting measures against co-operative farming while still others, in a different context, saw this as a proof of the necessity of 'co-operative socialism'.<sup>34</sup> Abstracting

30. The Indian agricultural economists - Ashok Rudra being prominent among them - who challenged the inverse - size relationship, did it either on purely statistical considerations or on the basis of empirical studies for different areas. None of them - whether Ashok Rudra (1968 a,b), A.P. Rao (1967) and Usha Rani (1971) who found an unsystematic relationship or SS Johl (1972) who found positive relationship for Punjab - subjected to criticism the static foundations of the arguments of their opponents. Their critique in this respect remained an incomplete one. Krishna Bharadwaj (1974 a, b) has provided a more systematic and rigorous critique of the static assumptions of the various hypothesis advanced in the debate.
31. C.H. Hanumantha Rao, "Agricultural Growth and Stagnation in India" 'The Economic Weekly, Feb. 27, 1965 reprinted in A.M. Khusro (ed.) Readings in Agricultural Development, Allied Publishers, New Delhi, 1968.
32. C.H.H. Rao, "Alternative Explanations of the Inverse Relationship between Farm Size and Output per Acre in India", Indian Economic Review, 1966.
33. C.H.H. Rao, "Uncertainty, Entrepreneurship and share cropping in India," Journal of Political Economy, May-June 1971.
34. Karl Kautsky's Marxist classic 'The Agrarian Question', was directed mainly against his contemporary E. David, who, on the basis of latest German and American Census data and economic studies, argued that small scale peasant agriculture had shown its capacity to survive, due to its inherent superiority, and could form the basis for the evolution of 'co-operative socialism'. Kautsky, by analysing in detail the economics of small farming in competition with large farming showed that persistence and survival of the small peasantry was not due to technical superiority but due to over work and under consumption of the small peasant family. K. Kautsky. The Agrarian Question (mimeo) Centre for Historical Studies, JNU, New Delhi-57. This has been now published, see J. Banaji, 'Kautsky's Agrarian Question', Economy and Society, Vol. 5 No. 1, Feb. 1976.

away from the specific historical context in which the inverse relationship is situated, leads to incomprehension of the distress conditions in which small peasant-tenant families forced to participate are compelled to over-exploit their resources for getting the maximum output.<sup>35</sup> With the advance in technical conditions of production in agriculture, the exclusive advantage of the small farms in terms of higher family labour availability is more than offset by the use of productivity raising measures by bigger farmers. The inverse relationship between holding size and productivity would no longer hold in such an advanced agriculture.<sup>36</sup> And we believe, the non-existence of this inverse relationship is an indication, as we argued above, of the advanced stage of Punjab agriculture where under the impact of mechanisation, patterns of labour use have undergone significant change as compared to the earlier period of FMS 1954-57 when an inverse size-productivity relationship was observed.

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35. K. Bharadwaj and P. K. Das. "Tenurial conditions and the Mode of Exploitation in some villages of Orissa," EPW, Feb. 1975, June 1975.

36. A. K. Sen (1966) one of the foremost participants in the debate did recognise the fact that the alleged efficiency in terms of higher output per acre of smaller farms was static in nature and from a dynamic point of view, particularly with reference to the future growth of output, hired labour based capitalist farms might turn out to be more efficient.

## CHAPTER - 3

### SOME IMPLICATIONS FOR THEORY: A NOTE:

In both Marxist debate on mode of production in Indian agriculture and marginalist theories of labour use, peculiar characteristics of family labour and hired labour have been overlooked and generalisations made which seem nothing more than forced theoretical abstractions. We in this chapter intend to comment briefly, on the basis of our observations made in the earlier two chapters, on issues having bearings on Marxist debate on the mode of production in Indian agriculture<sup>1</sup> and the marginalist theory of allocation of labour resources. Though we keep our focus on Indian studies on these subjects, given the nature of theoretical linkage, we would refer, where ever relevant, to studies elsewhere.

#### 3.1 Marxist debate on Capitalism in Indian Agriculture.

Though the discussion on the character of the mode of production in Indian agriculture was implicit in the famous size productivity debate which posed the question of small peasant farming vis-a-vis large scale farming, yet in its explicit terminology and connotations, it was sparked off by certain impressionistic observations made by certain eminent foreign observers of the

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1. The question of mode of production poses wide-ranging issues like the nature of the modern world economy, the mode in which Indian economy is structurally related to it, the relation between agriculture and industry and the operation of the law of motion of value. We have discussed some of these issues in a slightly greater detail in our paper "The Question of Mode of Production and the Indian Debate on Capitalism in Agriculture: Some Issues Examined" (unpublished), 1976. But here we specifically confine ourselves to examination of the issues relating to labour use.



Indian rural scene like Wolf Ladejinsky<sup>2</sup> and Daniel Thorner<sup>3</sup> about the emergence of a new class of 'gentlemen farmers' invading the rural scene with eyes on exploiting the new avenues of profitable investment in Indian agriculture. The implicit definition of capitalist farms from Thorner's view point was that "they are units based on hired labour, producing commodities for sale in the market for profit, a substantial share of these profits are re-invested for the intensification of production, or for enlarging the scale, or both"<sup>4</sup>. Further, in order to avoid the ambiguity about the 'farms based on hired labour', in a country where family labour seems to participate in production over a wide range of holdings, Thorner pointed out that "agricultural units based on hired labour, we considered to be those in which the total inputs of hired labour during the agricultural year normally exceeded the total inputs of family labour". Now as we shall see, the family labour - hired labour problematic was the key issue in the Indian debate. The question was posed in either of the two following ways:

1. The ratio of hired labour to family labour was considered as an index of capitalist farming, without reference to the peculiar way in which the family labour worked on the farm and the hired labour was employed. The argument was: what is necessary to see is the commodity character of the labour power and, therefore,

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2. Punjab's 'Green Revolution', EPW, June 28, 1969.

3. The Statesman, Nov. 1, 2, 3, 4, 1967, Calcutta.

4. D. Thorner, 'Capitalism in Indian Agriculture', EPW, Dec. 1969.

the mere fact of hiring labour, without reference to its special attributes, reflects the commodity character of the labour power used.

2. Some participants in the debate tried to transcend this methodological error by emphasising the necessity of examining the specific characteristics of the labour hired in. They raised the question of status of hired labour: permanent or casual, the mode of payment: cash or kind, the nature of hired labour participation: free or bonded. But more often than not these questions also very soon ossified themselves into inflexible formulae and a relapse was made into the same methodological error: permanent status of the hired labour and the fact of wages being paid to hired labour in kind were always considered as reflective of the bonded character of the hired labour. The implication drawn was: such labour not being free, the extent of its employment cannot be construed as indicative of capitalist penetration in agriculture. Again, the peculiar characteristics of the labour hired on permanent basis and paid in kind wages were not taken into consideration and the mere superficial occurrence of these phenomena was used as an argument against the use of hired labour/family labour ratio as an index of the extent of capitalist farming.

Ashok Rudra, Talib and Majid,<sup>5</sup> took the initiative of making an empirical investigation of the questions posed by impressionistic observations, by collecting data on 261 farms in Punjab -

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5. Ashok Rudra et al. 'Big Farmers of Punjab', EPW, Sep. 1969 Dec. 1969, and 'In search of a capitalist farmer', EPW, June 1970.

the state with relatively high level of mechanisation of agriculture and relatively bigger holdings and, therefore, most likely to have experienced capitalist penetration in agriculture. Two of the five criteria, they suggested, to identify a capitalist farmer were:

- a) higher use of hired labour than family labour
- B) payment of wages to hired labour in cash.

Having made these very restrictive identification criteria <sup>6</sup>, along with some others, they concluded that capitalism in Punjab agriculture was absent. Quite clearly Rudra and his colleagues did not delve into the important question of specific features of hired labour in Punjab agriculture and secondly, did not enquire about the conditions of wage payment in cash or kind. As we showed earlier (Chapter 1) that a share of the wages paid to hired labour in kind is a practice determined by social traditions in the region concerned and the particular demands of the hired labour. Wage payment in kind, therefore, in itself is no indication of the low bargaining position or bonded character of the hired labour. On the contrary, as we showed earlier that in a situation of rising prices of agricultural commodities and increasing agricultural productivity, the labourers prefer to have permanent contracts on a siri system (crop-sharing system) basis so that the kind payment in the shared produce they get, could fetch them higher monetary and real gains. Thus in an inflationary economy, also characterised by labour scarcity and food shortage, the capacity of the labour to acquire permanent labour status and get wages in kind, is a reflection of the higher

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6. We have dealt in more length with Rudra's method of identification of capitalist farmer in our paper. op. cit.,.

bargaining powers of the labour and, therefore, his more free character. R.S. Rao<sup>7</sup> emphasising the food deficit character of an inflationary economy and Ranjit Sau<sup>8</sup> emphasising the aspect of labour shortage in the wake of new technological developments in Indian agriculture made correct points in this regard. Rao criticising the methodology of Rudra, argued correctly that in a food deficit inflationary economy, payment in kind reappears or becomes stronger temporarily under pressure of the bargaining power of labour. Ranjit Sau pointed out that "...in view of the requirements of labour at critical points, the farmers with new technology prefer to use attached labourers, or permanent servants, rather than casual labourers. They even go to the extent of giving some land to the workers to keep them tied. Such phenomenon may tend to give the impression of semifeudalism; but it would be too stereotyped an understanding of the situation". But, unfortunately, having made this correct point, Rao committed an error of the other extreme by asserting that to gauge the extent of penetration of capitalist mode of production in agriculture, what is important to study is the hired character of the labour, irrespective of whether it is paid in cash or kind. Thus by counterposing an abstract theoretical formulation to concrete analysis, Rao obviated the necessity to study the specific peculiarities of the labour market and himself undermined the importance of the correct

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7. R.S. Rao, "In search of a capitalist farmer: A comment", EPW Dec. 19, 1970.

8. Ranjit Sau, "Political Economy of Agriculture: What is it all about?" EPW, May 19, 1973.

point he had made earlier. Paresh Chattopadhyay<sup>9</sup> also later took this position in a very consistent fashion and under emphasised, wrongly, the necessity to investigate the specific characteristics of hired labour.

Utsa Patnaik took up a contradictory stand. On one hand against Paresh Chattopadhyay, she argued that the extent of wage-labour exemployment cannot be always taken as an index of capitalist farming.<sup>10</sup> Discussing the question of characterisation of the mode of production in colonial agriculture, she argued that existence of a high percentage of wage labour in South India in the colonial period cannot be taken as an index of capitalist penetration in colonial agriculture since this wage labour was destitute, bonded labour. Extending the argument, she disputed the findings of S.C. Gupta<sup>11</sup> who on the basis of existence of high wage-labour employment in 1950's had concluded that capitalism had transformed the mode of production in Indian agriculture.<sup>12</sup> But without pointing out such characteristics of hired labour in India which could prove the use of this variable as incorrect, her objection against Gupta remained a mere formal one. On the other hand her own method of differentiation of the peasantry was based on the

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9. Paresh Chattopadhyay, "On the question of the Mode of Production in Indian Agriculture: A Preliminary Note," EPW, March 25, 1972; 'Mode of Production in Indian Agriculture: An Anti Kritik' EPW, Dec. 30, 1972.

10. 'On the mode of production in Indian Agriculture: A Reply' EPW, Sep. 30, 1972.

11. S.C. Gupta, "Some Aspects of Indian Agriculture", Enquiry No. 6, Delhi; 'New Trends of Growth', Seminar No. 38, 1962.

12. U. Patnaik, 'Capitalist Development in Agriculture: A Note, EPW; Sept. 25, 1971. Also Development of capitalism in Agriculture-I, Social Scientist, No. 2, Sept. 1972.

criterion of the ratio of hired labour to family labour, without specifying the characteristics of such hired labour.<sup>13</sup>

The Marxist debate on the mode of production in Indian agriculture thus remains an exercise in assertion of two opposite positions, outlined above, without any avenues of its transcendence.<sup>14</sup>

Our view is that though, formally speaking, the ratio of hired labour to family labour is a correct measure of the capitalist commodity character of a production unit, the mode of actual operation of labour use can only reveal the specific character of a production unit.<sup>15</sup> An analysis of concrete situation may reveal that determinants of the decision to hire in labour may be other than economic profitability. In a society with hierarchical structures of religion, caste, tribe and clan etc, the hiring in of labour may be associated with any of these

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13. 'Capitalist Development in Agriculture: Further comment', EPW, Dec. 25, 1971.

14. Some others like Andre Gunder Frank, Jairus Banaji, Hamza Alavi and Harry Cleaver bring in the question of the character of the world economy and the relation of Indian agriculture to it. Their positions are, again, purely methodological ones and offer no solution to the method of investigating the concrete conditions of relations of exploitation and relations of production in Indian agriculture.

Andre Gunder Frank: 'On Feudal Modes, Models and Methods of Escaping Capitalist Reality,' EPW, Jan. 1973. Jairus Banaji: 'Towards a theory of the colonial Modes of Production,' EPW Dec. 23, 1972. Banaji later abandoned his position by calling the formulation of the concept of colonial mode of production as wrong formulation. See J. Banaji: India and the colonial mode of production: A comment, EPW, Dec. 6, 1975. Also J. Banaji: 'Mode of Production in India Agriculture: A comment', EPW, April 7, 1973. Hamza Alavi: 'India and the colonial Mode of Production,' EPW, Special No. 1975, Harry Cleaver: 'Internationalisation of capital and Mode of Production in Agriculture', EPW, March 27, 1976.

15. A widow, with a low resource position and without any adult member in the family, carrying the agricultural operations wholly with hired labour cannot be characterised as a capitalist farmer.

phenomena.<sup>16</sup> In certain extreme cases, cultivators may be forced to employ some hired labour even when their own family labour is sufficient.<sup>17</sup> The indiscriminate use of hired labour/family labour criterion, in such cases, would over-estimate the extent of capitalist penetration in agriculture.

On the other side, the mere permanent status of hired labour and the fact of wage payments in kind is not in itself an indication of the bondness of labour. This fact is born out by our analysis of the system of hiring permanent labour in Punjab. By mechanically associating the above mentioned characteristics with bondedness and then not to use such hired labour as indicative of capitalist penetration in agriculture, will under estimate the extent of capitalist penetration.<sup>18</sup>

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16. Krishna Bharadwaj shows the existence of such a phenomena in Madhya Pradesh where some cultivators, even when they are not fully employed, hire in some labour because certain operations are done only by hired labour. She also points out that in certain cases of small farms deficient in bullocks and implements, hiring in of labour may be consequent to hiring of bullock, or such implements: K. Bharadwaj, 'Production conditions.....op. cit. p. 27

17. Radha Krishnan in a study of Kerala villages, reports that rural labour organised in strong unions in Kuttanand area of Allepey district do not allow even small cultivators to do self-cultivation. Radha Krishnan, Some Aspects of the Agrarian Structure in Kerala: An analysis with reference to the capitalist development in three villages, M. Phil dissertation, Jawaharlal Nehru University, New Delhi (unpublished). Rajput cultivators in Punjab, employ some categories of hired labour even when family labour is available."...the Rajput got most of his field work done by chamars" Darling, op. cit., p. 39.

18. Lenin's position can be considered as an extension of this argument where he argued against Narodniks that even semi-serf forms of exploitation in Russia were concealed forms of capitalist exploitation. See Lenin 'The economic content of Narodism' Collected Workd Vol. I, Moscow, 1963.

3.2 Marginalist theory on labour use.<sup>19</sup>

Our comments on the marginalist theory of labour use relate to only two points:

1. That in the rural labour market of a transitional economy<sup>20</sup>, market wage rate can not be considered as representing the opportunity cost of family labour.
2. A statistical relation 'marginal productivity of labour' derived from a fitted production function,

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19. There exists a vast amount of scholarly literature on the critique of marginalist theories of capital, distribution and production function. Some of the representative essays are included in E.K. Hunt and Jesse G. Schwartz (ed.) A Critique of Economic Theory, Penguin, 1972. But the literature on critique of marginalist theories of labour use is very scanty. In the context of agricultural economics, a work which combines theoretical critique of marginalist assumptions with careful empirical analysis, is K. Bharadwaj, 'Production Conditions..'.op. cit. The brief note on the critique of marginalist assumptions on labour use, here, is heavily dependent on the arguments developed in this book and an unpublished paper by K. Bharadwaj, 'A sceptical Note on the So-called 'Technical Relations' in Agriculture', Working Paper No. 35, Centre for Development Studies, Trivandrum, June 1976. The following papers were also helpful in clarifying the ideas. Ashok Rudra, 'Allocative Efficiency of Indian Farmers: Some Methodological Doubts', Economic and Political Weekly, Jan. 20, 1973; Amiya Bagchi, 'Some Implications of unemployment in Rural Areas', EPW, Special No. 1973; Nirmal Chandra, "Farm Efficiency under semi-feudalism: A critique of Marginalist theories and some Marxist formulations", EPW, Special No. 1974 A.K. Sen (1966), op. cit.
20. We, here, use the concept of 'transitional economy' in preference to the one like 'under developed' economy since the later concept gives the impression of a static society. Through the concept 'developing economy' is an improvement over the later, it connotes a uni-directional movement and, therefore, obscures conceptually the process of zig-zag, conflict and contradiction inherent in a process of transition from a backward 'mode of production' to an advanced one.



does not represent the actual contribution of labour to output. To draw any economic implications from such a derived statistical relation will be misleading.

Conventional economic theory with its premises derived from the mode of market functioning in perfect competitive conditions, abstracts away from the complexities of institutional forms that characterise the labour market in a transitional rural society. Under the competitive framework, markets are interlinked through price mechanism. Each producer decides on the use of a resource owned or purchased by treating its market price as an opportunity cost. The optimality of a resource use is decided on the basis of whether or not the marginal value productivity, of its alternative uses, equals the prevailing market price of the resource. Extending the same framework to study the pattern of labour use, optimality of labour use is judged whether or not the derived marginal productivity from a fitted production function equals the market wage-rate. Guided by motivations of efficient resource allocation, farm family labour, according to the principles of marginalist theory, should hire out its family labour when the marginal productivity of family labour at the family farm is below the prevailing market wage rate. By posing such a simple alternative between hiring out labour and working on the farm, marginalist theory assumes away the peculiar characteristics of the labour market viz. the components of the labour force entering the labour market and the motivations behind working on the farm and hiring out labour.

By converting family women and children into standardised units of male adults in order to calculate the total availability of family labour on the farm, the significant differences that characterise each component part from the viewpoint of working on the farm or hiring out, are slurred over. As we noted earlier (Chapter 1 & 2), one component of the total available family labour force is very specific to the farm due to a complex interplay of socio-cultural forces. Though in very big holdings, family female members and children don't participate in farm work even on their own family farms, the phenomenon of family female and child participation in certain operations of farm work among the small and middle sized holdings is not completely absent. But even on such holdings, this part of the family labour force is available only for work on the family farm. Hiring out of family females and children as we noted earlier is completely absent, on all size classes of holdings. This part of the labour force is, therefore, not guided by alternative choices between marginal returns from work on family farm and wage earnings from hiring out labour. Not only this component of the labour force is specifically confined to work on the family farm, it is more narrowly restricted to participation in a few operations only. For example, if two operations ploughing and irrigation on two different plots of the family farm have to be done simultaneously so that the family male adult labour is insufficient to cope up with the whole work, family female labour will not be employed on either of the two operations due to socially prevalent

barriers against female participations in these operations. Similarly in peak periods of harvesting, when the family male labour even on small holdings is inadequate, family female labour will not be utilised for harvesting because of the same social customs.<sup>21</sup> In such cases, hiring in of labour is considered a natural-rational decision. Hiring in of labour is, therefore, not dependent upon full employment of the family labour. In case of certain caste association with some agricultural operations, hiring in of labour is evidently a non-economic decision.<sup>22</sup> And hiring out labour by family male adult earners also is highly restricted phenomenon due to the weight of caste traditions against it.<sup>23</sup> It follows, therefore, that family labour and hired labour are not two perfectly substitutive categories. Neither the full employment of the family labour is a condition for outside labour to be hired in nor the under employment of the family labour automatically leads to hiring out. In other words, hiring in of labour does not imply full utilisation of family labour and, therefore, the marginal productivity of family labour being equal to wage rate and consequently equalisation of the marginal productivities of family labour and hired labour. Given that the farming family aims not at maximising profits but maximising output,

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21. We gave the instance, in Chapter 1, of utilisation of family females on harvesting, by two peasant households meeting strong socially disapproving reaction.

22. We pointed out, above, some instances of this.

23. We pointed out above the case of Jat-Sikh cultivators, in this regard.

given the heterogeneous character of the family labour force as indicated above and given the relative strength of social traditions in a transitional economy, the market wage rate is not the opportunity cost of family labour.

Coming to the second point on the statistically derived relation 'marginal productivity of labour' from a fitted production function (generally valued at the geometric mean level of total labour input), the marginal productivity of family labour and hired labour can not be calculated on their total labour time input aggregated over different agricultural operations. Labour input in agriculture is spread over different agricultural operations like seed-bed preparation, sowing, weeding and harvesting etc. The contribution to total output, of labour time input in each of these operations is different and is complementary to each other. The productivity of labour time input in the pre-harvesting operations is dependent upon the application of the required amount of labour input in the harvesting season. Since the calculation of an optimum proportionality between labour time inputs in different operations is problematic, the contributions to total output of the labour time input of family labour and hired labour in each of these operations cannot be estimated. The problem gets more complicated when all these heterogeneous labour time inputs are aggregated to form a homogeneous total labour input. The marginal productivity of valued hired and family labour time inputs, thus calculated will merely express a statistical relation and not a measure of the actual effectivity of the

contribution made by family, hired and total labour time.

The problem gets further complicated if we see that there is an association between productivity of hired and family labour. For instance, if a cultivator hires a tractor, he generally hires the driver also. Now if in a certain operation involving tractor use, the family labour and hired labour (driver) both have to participate, the productivity of the one is dependent upon the productivity of the other and the marginal productivity of family labour and hired labour calculated by disentangling this conjoint contribution, will be a spurious result. What we are emphasising, here, is the complementarity aspect of the family labour and hired labour whereas earlier, we emphasised the non-substitutive character of family labour and hired labour. In other words, family labour and hired labour are neither two perfectly substitutive nor mutually exclusive categories.

Finally, the intensity of labour use in a single time unit may vary from farm to farm so that the equivalence of hours of work on two different farms may actually express non-equivalence of the total work effort. Calculating the labour time by merely counting the number of hours (or any time unit) put in and then through valuation—which itself poses another set of problems—calculating the productivity of this labour will give a distorted picture of the actual effectivity of the labour time input on these two different farms.

To repeat; the two points we have tried to make are that: (1) Wage rate can not be considered as an opportunity cost.

for family labour and (2) given the complexity of the operation wise distribution of agricultural work, the complementarity in some cases and non-substitutability in others between hired labour and family labour contribution and the heterogeneous character of the labour inputs, the statistically derived marginal productivities of family labour, hired labour and, therefore, of total labour fail to express the actual effectiveness of the contribution made by family labour, hired labour and total labour respectively. To draw any economic implications from such statistically derived marginal productivities, about the efficiency of these resources' use, will merely give spurious results.

## CHAPTER - 4

### 1. SUMMARY AND CONCLUSIONS:

With the limitations of data available in Part II Tables of the Studies in the Economics of Farm Management, we would like to point out, before hand, that we put the scope of our study to be more of suggestive nature for further research we intend to carry on, rather than to be a self-contained conclusive work. Our emphasis, however, in both the present study and the projected one, remains on bringing out the peculiarities of the labour market in the rural economy of Punjab and the pattern of labour use by different sections of the peasantry.

4.1 In chapter 1, we attempted to synthesise field - observations on the pattern of labour use in two South-West districts - Ferozepur and Faridkot - of Punjab with some documentary evidence available to us on labour contracts in the region and certain historical and current information on the subject we could glean from published research works. The purpose of the chapter 1 was to serve partially as a historical background and partially as a hypothetico-descriptive framework for analysing more concrete data relating to the recent period in late sixties in chapter 2.

4.2 In chapter 1, we described certain characteristics of the pattern of participation in farm work by different components of the family labour force i.e. male adults, female adults, old men and women and children. We pointed out the role played by Jat-Sikh cultivators, the predominating cultivating caste in Punjab, in

shaping this pattern. An attempt was made to relate the historically observed patterns of farm work participation by family female adults and children to the recent changes in that as a result of new socio-economic developments in the rural society of Punjab.

4.3 We also described the characteristics of hired labour used by different sections of the peasantry. The characteristics of the casual labour and permanent labour employment, their sex-age composition and its relation to certain farm operations and their mode of payment, were also described.

4.4 We emphasised a little more on the characteristics of permanent labour employment in Punjab agriculture. We described the features of 'siri' and 'theka' system of permanent labour employment. We disputed the commonly observed proposition that permanent labour employment reflects 'attached-bonded' character of farm labour by relating the phenomenon of permanent labour employment to labour shortage occurring in the wake of Green Revolution in Punjab. We pointed out that the specificities of this situation suggest that permanent labour employment, paradoxically, reveals the higher bargaining power and, therefore, more free character of the agricultural labour in Punjab.

4.5 In chapter 2, we analysed the data collected for 150 households in three consecutive years 1967-68, 1968-69 and 1969-70 for Ferozepur district under the scheme of Farm Management Studies. Individual household-wise data as given in Part II Tables, available with the Directorate of Economics and Statistics, Ministry of Agriculture, Delhi and the Department of Economics and Sociology,



Punjab Agricultural University Ludhiana, were the basis of our study. Households were divided into six categories of holdings (in hectares) namely 0-5, 5-10, 10-15, 15-20, 20-25 and 25 & above. We designated holdings in the 0-5, 5-10 hectares size group; 10-15, 15-20 hectare size group and 20-25 & 25 and above size group as small sized, middle sized and big-sized respectively in a purely relative sense. The terms 'holding size group', 'size categories' and 'sections of the peasantry' are used interchangeably in the context of present study.

4.6 The scope of our study in chapter 2 was limited to an investigation of the pattern of labour utilisation on crop-production only, by these different sections of the peasantry and, therefore, excludes from analysis the investigation of pattern of labour use on cattle maintenance, social affairs, transportation, holidays etc. The focus of investigation was centred on analysis of two aspects (a) to find out the relationship between variations in output per hectare and that in total labour utilised per hectare by different size groups of the peasantry and (b) to investigate the components of total labour utilized per hectare on different size groups namely family labour, hired labour and their components in turn.

4.7 Size of family tends to vary positively with respect to size of holding. But in order to find out characteristics of the labour force, what is important to see is the pattern of work participation by different components of the farm family.

4.8 The proportion of male adult earners of farm work per household to number of available male adults per households tends to

decline with the rise in the size of holdings. Conversely, the proportion of male adult dependents per household to available number of male adults per household tends to rise with the rise in the size of holding. This relation seems to suggest that male adults in the bigger holdings retire from farm work relatively earlier than the male adults in the lower size groups who seem to work till later years of life.

4.9 The proportion of female adult earners on farm work per household to the number of available female adults per household is very low on an average. The phenomenon of female employment on farm work is totally absent in the case of bigger holding size groups and is limited to a very few families in the lower and middle sized groups. The same relation tends to emerge about the child labour employment. It shows that the employment of family females and children on farm work is a function of the economic status of the farming family though social customs regarding employment of family females on farm work do exercise their influence.

4.10 The phenomenon of off-farm employment by family females and children is reported to be completely absent. The proportion of male adult earners opting for non-farm work is, on an average very low (3% to 6%). Male adult earner employment on non farm work is confined to a very few families (varying from 4% to 11%) in the small and middle holding size groups. Thus the extent of family female adults and children working on farm and male adults working on non-farm activities being very low, crucial to the understanding of the differences in availability of family labour force on farm

work, is the pattern of variations in male adult earners. The data suggest a consistent inverse relationship between holding size and male adult earners per hectare.

4.11 Family labour per hectare tends to decline with the increase in holding size. Higher utilisation of family labour per hectare on smaller farms is a combined result of higher availability of male adult earners for hectare and higher labour input by a family male adult earner on smaller holdings. Conversely, on bigger holdings both availability of male adult earners per hectare as well as total labour input by a single male adult earner, are low and, thus, result in lower utilisation of family labour per hectare. That shows that small farmers work more intensively on crop production than do the bigger farmers who seem to be leaning towards enjoying the comforts of leisure and holiday by reducing their work load on fatiguing operations of crop production.

4.12 Utilisation of hired labour per hectare shows an interesting consistent relationship to size of holding. While small and big holding size groups employ almost the same amount of hired labour per hectare, the middle sized groups (10-15 hectares and 15-20 hectares) hire more labour per hectare. We tried to relate this interesting phenomenon to differential levels of mechanisation on different holding size groups and its differential impact on labour utilisation on different holding size groups. Though direct level evidence supporting our explanation is lacking, some evidence from the FMS and some from independent studies does tend to support our line of argument.

4.13           Analysing the behaviour of components of hired labour, we found that the utilisation of casual labour per hectare does not vary significantly over different size groups whereas, on the other hand, utilisation of permanent labour per hectare on holdings employing both types of hired labour declines consistently as the holding size increases. Secondly, on such holdings, the utilisation of permanent labour per hectare is higher than that of casual labour per hectare for all size classes of holdings. This reveals an interesting feature of the pattern of labour use. While employment of casual labour is more widely dispersed over all size classes of holdings, the utilisation of permanent labour is higher on such holdings of all size groups as employ both types of hired labour—a number which is significantly less than the number employing casual labour. There was not a single household which consistently reported no hiring of labour in all the three years. Majority of the holdings in all size groups employed either one or two permanent servants, the phenomenon of employing three or more than three permanent servants being very rare and limited to only a few households in the bigger holding size groups. On an average about 65% of the households reported employment of permanent labour. Such high incidence of permanent labour employment, even after the introduction of mechanisation might give the appearance of attached bonded labour practices in Punjab agriculture. But on the basis of certain evidence showed in chapter 1, we tend to believe that, on the contrary the phenomenon reflects higher bargaining power of the rural labour in the labour shortage economy of Punjab.

4.14 Total human labour per hectare declines consistently as the holding size increases, Variations in total labour per hectare seems to be partly the result of variations in intensity of cultivation and intensity of irrigation which also tend to decline with the rise in the size of holding.

4.15 Output per hectare does not hold any systematic relationship to size of holding. We thus observed that higher utilisation of total labour per hectare by small holdings does not result in higher output per hectare on them. We attempted an interpretation of this result, which controverts all earlier explanations of higher yield per hectare on small holdings in terms of higher labour use per hectare, by relating it to the new technological developments in Punjab agriculture. We especially emphasised the point that inverse relationship, which in our view is a reflection of backward agriculture, gets neutralised with technical advance in agriculture. Our view gets more credence if we note that the same area in 1954-57 FMS revealed an inverse relationship.

4.16 In chapter 3, we made brief comments, on the basis of our discussion in chapter 1 and 2, relating to implications for the Marxist debate on mode of production in Indian agriculture and the marginalist theory of labour use. We emphasised the point that family labour-hired labour problematic has been made a key issue in the Marxist debate on mode of production in Indian agriculture without examining the specific characteristics of hired labour use. On one hand, we pointed out that the use of the ratio hired labour to family labour as a criterion for measuring the extent of capitalist penetration without examining the character of hired

labour, would over-estimate the penetration of capitalism in agriculture. On the other hand, we pointed out that considering employment of permanent labour and wage payments in kind as symbolic of bondedness, without examining the characteristics of labour employed permanently and paid in kind wages, would underestimate the extent of capitalist penetration. Our view is that though hired labour is a correct measure, formally speaking, of the family labour extent of capitalist-commodity character of production in agriculture, its validity can be established only by a concrete analysis.

4.17 We briefly commented on the difficulties, according to marginalist assumptions, in treating wage rate as an opportunity cost of family labour and pointed out the difficulties in equating statistically derived marginal productivities of family labour, hired labour and total labour from a fitted production function with actual contributions of family labour, hired labour, and total labour respectively.

## II. SUGGESTED LINES OF FURTHER ENQUIRY:

The limitations of data as given in the Part II Tables of FMS, was the chief constraint in determining the scope of this study. Since the purpose of FMS was to study the technological input-output relations, the lack of information on detailed aspects of labour use was an inevitable outcome. We have indicated the inadequacy of the data at relevant places in our chapter 1 and 2. Nevertheless, the analysis of even this limited data, has enabled us to clarify some important aspects of labour use in Punjab agriculture and, more importantly, has made us aware of the lucrae

to be filled in by further research. This study, therefore, should be considered as a mere stepping - stone for more detailed further research we intend to carry on. The continuity between the present study and the further research remains to be the emphasis we place on bringing out the peculiarities of the pattern of labour use in Punjab agriculture in the wake of Green Revolution. Some of the points of anticipated research can be outlined as following:

1. In order to see the possible association between certain agricultural operations and caste affiliation of the family labour and hired labour, data specifying the religion, caste, tribe, clan etc. of the family and hired labour and the particular operations they engage in and hesitate to engage in needs to be collected. The important studies of ML Darling and Tom Kessinger merely touch these aspects. Only closer field level enquiry can transcend the limitations of these important studies and compare the historical changes, if any, that have occurred as a result of increased commercialisation of the rural economy of Punjab.

2. In order to see the sex-age relation to participation in particular operations in the specific case of Punjab, data on family male, female, child and hired male, female and child participation in specific operations needs to be collected. In order to have a more correct picture of the specificities of the rural labour force in Punjab, data on age-group differentiation on the lines indicated in the Report of the Committee of Experts on Unemployment Estimates, needs to be collected. The question of under-employment, seasonal unemployment, disguised unemployment ~~and~~

and surplus labour can be meaningfully analysed only if the data in such form is available.

3. A few recent studies in agricultural economics have emphasised the close relationship between the tenurial arrangements, the indebtedness of the tenant, the cropping pattern and the pattern of labour utilisation that ensues from it. To study this much neglected aspect of Indian agrarian economy, more precise data than merely on ownership, leased in and leased out, needs to be collected. Open and disguised agreements between lessors and lessees on crops to be grown, mode of debt repayments, share to be paid in kind, cash or in labour days, can be collected only through a careful field enquiry.

4. The much-discussed question, these days, of indebtedness, bondedness and over-exploitation of rural labour, can be objectively investigated only by gathering more documentary evidence on conditions laid down in the labour contracts of permanently employed labour about the duration of the contract, the nature of consumption loans advanced, the mode of cash and kind wage payments and the nature of penalties, if any, in an event of breaking off the contract. Such information needs to be supplemented by gathering significant aspects of oral contracts, still in vogue in the rural society of Punjab. Thorner's work on employer-labourer relationship (op. cit) in Indian agriculture, done in late fifties, though not very comprehensive, but still very suggestive, still remains the best attempt on the subject. More detailed area-wise field investigations need to be conducted to make it more comprehensive and note the



direction of changes that have taken place in the intervening period.

5. A number of good studies exist which have gone into the technical aspects of labour displacement and labour augmentation as a result of different levels and phases of mechanisation in Punjab agriculture. But such studies need to be supplemented by enquired which relate mechanisation to generation of new forms of employer - labourer relationship in Punjab agriculture.

6. And lastly, to render comparability over time and thus place the changes occurring place in a historical perspective, the history of the pattern of labour use by different sections of the peasantry in Punjab agriculture over the past one century, needs to be documented and reconstructed.

This in itself is not a small task. But the relative emphasis on any of these aspects our further reasearch would place, would be determined by the time factor and availability of resources.

APPENDIX - 1

List of villages, the farming practices of which form the basis of observations in Chapter 1.

1.	Dhindsa	
2.	Ratta Khera	
3.	Misri Wala	Ferozepur Tehsil, Ferozpur district.
4.	Pyreana	
5.	Ugoke	
6.	Ferozeshah	
7.	Pakhi Khurd	
8.	Dallewala	Faridkot Tehsil, Faridkot district.
9.	Sadhanwala	
10.	Golewala	
11.	Harike Kalan	
12.	Khokhar	
13.	Bhagsar	
14.	Sangu Dhawan	
15.	Baam	Mukatsar Tehsil, Faridkot district.
16.	Lakhewali	
17.	Takhat Mulana	
18.	Panniwala Fatta	
19.	Jammu Wala	
20.	Harie Wala	
21.	Nathu Wala	Moga Tehsil, Faridkot district.
22.	Lande Rode	
23.	Dadahoor	

APPENDIX - 2

Specimen of a labour contract document in the case  
of child labour hired permanently.

Account of A.....Singh S/o C....Singh, caste Mazhbi Sikh,  
Residence - (village), Tehsil and District Ferozeput.

In the house of H.....Singh S/o S....Singh village.....

Today dated 11-8-73, A....Singh S/o C...Singh, caste Mazhbi Sikh has pledged to hire out his son S.....for farm work and cattle maintenance for Rs.306.25, the half of which is Rs.153.13 from Sawan 15th Samvat 2030 to Har Ist, Samvat 2031. The condition of the contract is that if the boy absents from the work during the month of Visakh - Jeth for hiring out himself to another cultivator or deliberately sits at home, an amount equal to half the then prevailing daily wage rate for a male adult labourer, will be deducted from his wage-bill. For absence during the remaining period, deduction at the rate of Rs.1.50 per day will be made. Today, Rs.150-00 in cash have been received by me as advance payment and the necessary promissory note has been written. The remaining amount will be taken after Lohiri whenever required. The document has been written so that it may be used when needed.

(Signature)

(Thumb impression)

(Signature)

Witness

A...Singh  
(Father of the child labour)

Witness

APPENDIX - 3

Specimen of a labour contract document (siri system)

Account of K...Singh S/o K...Singh, Grand son of K..Singh, village....from dated 1st Har, Samvat 2033. Given Rs.500-00 cash to K...Singh for household expenses.

His share in the produce will be 1/10th while the employer has got two hals (ploughs). The total expenditure incurred on hiring other labour and paying land revenue, to be shared accordingly.

(Signature)

Writer and Witness

After having received Rs.500-00 in cash, K...Singh solemnly pledges that he will work for one year that is for two seasons Kharif and Rabi.

Contract entered with G...Singh S/o S...Singh, Village.... till the date 1st Har, Samvat 2034 for performing agricultural work.

(Thumb impression)

(Thumb impression of left hand)

Witness

K...Singh about the contract on Crop - sharing and advance loan of Rs.500-00 already taken.

APPENDIX - 4

Specimen of a labour contract document (Theka system).

The account of P...Singh S/o I...Singh, Mazhabi Sikh, resident of....(village), Tehsil and district, Ferozpur, in the house of B....Singh S/o S.....Singh, resident of (village).

This 7th day of August 1967, I.P.Singh S/o I...Singh, Mazhabi Sikh, resident of ....(village), Tehsil and district, Ferozpur, having agreed to work on contract as a labourer for cultivation for one year from 8th of the month of Har of Samvat 2024 to 8th of the month of Har of Samvat 2025, for a settled amount of Rs.One thousand and fifty (half of which is Rs. Five hundred and twenty five), have entered the job; and, out of the above - mentioned amount I have received Rs.400-00 as an advance in the presence of the..... witnesses. I shall take Rs.350-00 on the day of Lohiri of Samvat 2024 and the remaining Rs.300-00 after completing the Hari crop. If I remain absent from the work, I shall be liable to pay the daily wages, according to the rules of the village. If I leave the job in between I shall be liable to return the amount taken as advance.

Therefore, I have written this text so that it may remain as a proof and could be used when required.

(Signature)

(Thumb impression)

(Signature)

Witness

P...Singh, S/o  
I...Singh.

Witness

Writer of the document.....(Signature)

APPENDIX - 5

Average daily wages of a casual adult male field  
labour in different months, 1967-68 (A day = 8 hours)

Months	Zone I	Zone II	Zone III	Average wages for the region
August	5.25	4.00	4.00	4.25
September	5.25	4.00	4.25	4.37
October	5.50	4.00	4.38	4.48
November	5.50	4.25	4.33	4.64
December	6.00	4.25	5.00	5.30
January	6.00	4.00	5.40	5.05
February	6.00	4.00	5.40	5.05
March	8.50	5.50	5.75	6.22
April	8.00	6.75	7.75	7.47
May	8.00	6.62	7.12	7.13
June	7.00	6.38	6.30	6.47
July	7.00	6.50	6.50	6.60
Annual Average	6.50	5.02	5.52	5.55

Source: A.S. Kahlon, et. al. Studies in Economics of Farm Management  
Ferozepur District (Punjab). Report for the year 1967-68.

APPENDIX - 6

Average daily wages of a casual adult male field labourer in different months for various farm operations, 1968-69. (A day = 8 hours)

Months/ operations	Ploughing	Sowing	Hoeing	Harvesting or Picking	Thresh- ing	Average.
July, 1968	6.35	6.35	5.71	—	—	6.14
August	5.75	5.56	5.78	—	—	5.70
September	5.90	5.95	6.13	4.25	—	5.58
October	5.50	5.30	5.00	4.25	—	5.01
November	5.89	5.89	6.37	4.39	4.62	5.43
December	5.82	6.18	5.35	4.29	4.62	5.25
January, 1969	5.75	5.75	5.39	4.69	5.25	5.37
February	5.46	5.55	5.80	5.00	5.00	5.36
March	5.75	5.64	6.10	6.39	5.83	5.94
April	6.69	6.33	6.37	7.52	6.72	6.73
May	6.32	6.32	6.09	6.50	7.07	6.48
June	6.52	5.87	6.21	—	12.00	7.63
Average 1968-69	5.98	5.89	5.86	5.25	5.84	6.30

Source: A.S. Kahlon, et. al, Studies in Economics of Farm Management Ferozepur District (Punjab). Report for the year 1968-69.

APPENDIX - 7

Average daily wages of a casual adult male field labourer in different months for various farm operations. 1969-70 (A day = 8 hours)

Months	Ploughing	Sowing	Hoeing	Harvest- ing or picking	Threshing	Average.
July, 1969	5.35	5.35	5.39	5.20	—	5.32
August	5.27	5.02	5.33	5.50	—	5.28
September	5.80	5.51	5.77	5.52	—	5.65
October	6.61	6.49	5.97	5.17	6.85	6.41
November	6.50	6.55	6.38	6.04	6.23	6.33
December	5.49	5.54	5.73	5.06	5.59	5.48
January, 1970	5.18	4.90	5.39	5.24	5.43	5.23
February	5.49	5.58	5.60	5.84	5.96	5.71
March	5.69	5.70	5.84	6.06	6.06	5.87
April	7.70	7.82	7.98	8.48	8.17	8.02
May	8.74	8.74	8.83	12.27	9.95	9.71
June	7.74	7.74	7.83	9.27	7.95	8.11
Average 1969-70	6.30	6.25	6.34	6.72	6.91	6.43

Source: A.S. Kahlon, et. al, Studies..... op. cit. Report for the year 1969-70.



APPENDIX - 8

Villages selected for study in the cost accounting sample (zone wise) in FMS survey of Ferozpur District, 1967-68, 1968-69, 1969-70.

Zone.		Village.
I	1 *	Bilaspur
	2 *	Daroli Bhai Ki
	3	Gill
II	1 *	Kahnewala
	2 *	Ghubaya
	3	Malwal
	4 *	Bhinder Kalan
	5	Nurpur
III	1 *	Mulianwali
	2 *	Bodiwala (Pitha)
	3 *	Muradwala Bhongarh
	4	Baluana
	5	Jhabelwali
	6	Channu
	7	Faquarsar

\* Villages covered under the earlier study during years 1954-57.

Source: A.S. Kahlon, et. al, Studies.....Three-years consolidated report.

APPENDIX - 9

Distribution of the selected holdings according to size groups,  
Ferozepur District, 1967-68.

Zone	Village	Size-group					Total:
		A	B	C	D	E	
I	Bilaspur	2	2	4	2	---	10
	Daroli Bhai Ki	2	2	4	2	---	10
	Gill	2	2	1	5	---	10
II	Total:	6	6	9	9	---	30
II	Kahnewala	2	2	2	4	---	10
	Ghubaya	3	2	2	3	---	10
	Bhinder Kalan	2	2	3	3	---	10
	Malwal	2	2	2	2	2	10
	Nurpur	2	2	2	4	---	10
	Total	11	10	11	16	2	50
III	Mulianwali	2	2	2	2	2	10
	Bodiwala	2	2	2	2	2	10
	Muradwala	2	2	2	4	---	10
	Balrana	2	2	2	2	2	10
	Jhabelwali	2	2	2	3	1	10
	Channu	2	1	3	2	2	10
	Faquarsar	2	2	2	2	2	10
	Total:	14	13	15	17	11	70
Grand Total:		31	29	35	42	13	150

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Size-groups:

A: up to 6 hectares  
 B: 6 to 9 hectares  
 C: 9 to 14 hectares  
 D: 14 to 24 hectares  
 E: 24 and above 24 hectares.

APPENDIX - 10

Distribution of the selected holdings according to our size group stratification, Ferozepur District, 1967-68.

Zone I	0-5	5-10	10-15	15-20	20-25	25 & above	Total:
Bilaspur	1	3	4	2	0	0	10
Daroli Bhai Ki	1	3	5	1	0	0	10
Gill	2	3	2	3	0	0	10
<b>Total:</b>	<b>4</b>	<b>9</b>	<b>11</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Zone II</b>							
Kahnewala	2	4	1	1	2	0	10
Ghubaya	3	4	2	1	0	0	10
Malwal	1	4	1	2	0	2	10
Bhinder Kalan	2	3	2	2	1	0	10
Nurpur	2	2	3	3	0	0	10
<b>Total:</b>	<b>10</b>	<b>17</b>	<b>9</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>50</b>
<b>Zone III</b>							
Mullianwali	0	4	2	2	0	2	10
Bodiwala	1	3	2	1	1	2	10
Muradwala	1	4	2	0	3	0	10
Baluana	2	3	1	2	0	2	10
Jhabelwali	2	2	4	1	0	1	10
Channu	2	2	3	1	0	2	10
Faquarsar	1	3	3	1	1	1	10
<b>Total:</b>	<b>9</b>	<b>21</b>	<b>17</b>	<b>8</b>	<b>5</b>	<b>10</b>	<b>70</b>
<b>Grand Total</b>	<b>23</b>	<b>47</b>	<b>37</b>	<b>23</b>	<b>8</b>	<b>12</b>	<b>150</b>

APPENDIX - 11

Distribution of holdings according to levels of hired labour use.

	1967-68	1968-69	1969-70
Pure wage-labour based farms (i.e. family labour = 0)	2	0	0
Predominantly wage-labour based farms (i.e. $\frac{\text{hired labour}}{\text{family labour}} > 1$ )	84	71	74
Transitional farms ( $\frac{\text{hired labour}}{\text{family labour}} = 1$ )	1	1	0
Predominantly family labour based farms (i.e. $\frac{\text{hired labour}}{\text{family labour}} < 1$ )	62	76	75
Pure family labour based farms (i.e. hired labour = 0)	1	2	1
Total:	150	150	150

B I B L I O G R A P H Y

- Alavi, Hamza (1975): 'India and the Colonial Mode of Production',  
EPW<sup>\*</sup>, Special No. 1975.
- Bagchi, Amiya Kumar (1973): 'Some Implications of Unemployment in  
Rural Areas', EPW, Special No. 1973.
- Banaji, Jairus (1972): 'For a Theory of Colonial Modes of Production',  
EPW, December 23, 1972.
- (1973): 'Mode of Production in Indian Agriculture: A  
Comment', EPW, April 7, 1973.
- (1975a): 'India and the Colonial Mode of Production: A  
Comment', EPW, December 6, 1975.
- (1975b): 'Modes of Production in a Materialist Conception  
of History', 1975 (mimeo)
- Bardhan, P.K. (1970): 'The Green Revolution and Agricultural Labourers',  
EPW, Special No. July 1970.
- Bhalla, G.S. (1972): 'Changing Agrarian Structure in Haryana: A Study  
of the Impact of Green Revolution', (Govt. of  
Haryana, Chandigarh, 1972).
- Bhalla, Sheila (1976): 'New Relations of Production in Haryana  
Agriculture', EPW, March 27, 1976.
- Bharadwaj, Krishna (1974a): 'Notes on Farm Size and Productivity',  
EPW, March 1974.
- (1974b): 'Production Conditions in Indian Agriculture,  
(Cambridge University Press, 1974).
- Bharadwaj, Krishna  
&  
Das, P.K. (1975a): 'Tenurial Conditions and Mode of Exploitation:  
A Study of Some Villages in Orissa', EPW,  
Annual No. 1975

---

\* EPW, here, denotes Economic and Political Weekly.

- Bharadwaj, Krishna  
&  
Das, P.K. (1975b): 'Tenurial Conditions and Mode of Exploitation; Study of Some Villages in Orissa: Further Notes,' EPW, June 1975.
- Bharadwaj, Krishna (1976): 'A Sceptical Note on the so-called 'Technical Relations' in Agriculture', Working Paper No. 35, Centre for Development Studies, Trivandrum, 1976 (mimeo )
- Billings, Martin H and  
Singh, Arjan (1970): 'Mechanisation and the Wheat Revolution: Effect on Female Labour in Punjab', EPW, December 1970.
- Boserup, E (1970): Women's Role in Economic Development (George Allen & Unwin Ltd., London, 1970)
- Breman, Jan (1974): Patronage and Exploitation: Changing Agrarian Relations in South Gujarat, India (Berkeley, University of California Press, 1974).
- Chandna, R.C. (1967): 'Female Working Force of Rural Punjab - 1961', Man-Power Journal, Jan.- March 1967.
- Chandra, Nirpal (1974): 'Farm Efficiency under Semi-Feudalism: A Critique of Marginalist Theories and Some Marxist Formulations,' EPW, Special No. 1974.
- Chattopadhyay, Paresh (1972a): 'On the Question of the Mode of Production in Indian Agriculture: A Preliminary Note', EPW, March 25, 1972.
- (1972b): 'Mode of Production in Indian Agriculture: An Anti-Kritik', EPW, December 30, 1972.
- Chayanov, A.V. (1966): The Theory of Peasant Economy, (Homewood, Illinois, 1966).
- Cleaver, Harry (1976): 'Internationalisation of Capital and Mode of Production in Agriculture', EPW, March 27, 1976.

- Darling, M.L. (1975): The Punjab Peasant in Prosperity and Debt  
(Oxford University Press, 1925).
- D'souza, Victor. S.(1969): 'Changing Socio-economic Conditions and  
Employment of Women in India 1871-1961',  
Transactions of the Indian Institute of  
Advanced Study, Vol. Seven, Simla 1969.
- Dube, S.C. (1956); Indian Village, London, 1956.
- Fei, J.H.C. and Ranis, G. (1964): Development of the Labour Surplus  
Economy: Theory and Policy (Irwin,  
Homewood, Illinois, 1964).
- Frank, Andre Gunder (1969): Capitalism and Under-development in Latin  
America (Penguin, 1969).
- (1973): 'On 'Feudal' Modes, Models and Methods of  
Escaping Capitalist Reality', EPJ,  
January 1973.
- Gadgil, D.R. (1965): Women in the Working Force in India(Asia Publishing  
House, New York, 1965).
- Georgescu - Roegen, N. (1960): 'Economic Theory and Agrarian Economics',  
Oxford Economic Papers, Feb. 1960,
- Gupta, S.C.: "Some Aspects of Indian Agriculture", Enquiry No. 6.  
----- (1962): 'New Trends of Growth', Seminar No. 38, 1962.
- Government of India: Planning Commission (1970): Report of the Committee  
of Experts on Unemploy-  
ment Estimates, (New  
Delhi, 1970).
- Hanumantha Rao, C.H. (1963): 'Farm Size and Economies of Scale', The  
Economic Weekly, December 1963.
- (1966): 'Alternative Explanations of the Inverse Relationship  
Between Farm Size and Output per Acre in India',  
The Indian Economic Review, October 1966.

- Hanumantha Rao, C.H. (1968a): 'Farm Size and Yield per Acre: A Comment', EPW, September 14, 1968.
- (1968b): 'Agricultural Growth and Stagnation in India', The Economic Weekly, Feb. 27, 1965.
- (1971): 'Uncertainty, Entrepreneurship and Share - Cropping in India', Journal of Political Economy, May-June 1971.
- Hunt, E.K. and Schwartz Jesse G. (1972): A Critique of Economic Theory (Penguin, 1972).
- Joh1, S.S. (1972): Farm Size, Economic Efficiency and Social Justice (A Case of Punjab), Punjab Agricultural University, Ludhiana, 1972.
- Joh1, S.S. and Kahlon, A.S.(1966): 'Labour Utilisation Patterns and Employment Potentials of Punjab Farms: A Case Study', Indian Journal of Agricultural Economics, Jan.-March 1966.
- Joh1, S.S. (1975): 'Mechanisation and Income Distribution in Punjab', Journal of Development Studies, Vol. 11, 1975.
- Kahlon, A.S. and Miglani, S.S.; Studies in the Economics of Farm Management, Ferozepur District (Punjab), Reports for the years 1967-68, 1968-69, 1969-70 and Three Year Consolidated Report 1967-68 - 1969-70, Punjab Agricultural University, Ludhiana.
- Kautsky, Karl (1976): 'Kautsky's Agrarian Question (a summarised version translated by J. Banaji), Economy and Society, Vol. 5, No. 1, Feb. 1976.
- Kessinger, Tom, G. (1974): Vilayatpur 1848 - 1968: Social and Economic Change in a North Indian Village (University of California Press, Berkeley, 1974).
- Khusro, A.M. (1964): 'Returns to Scale in Indian Agriculture', Indian Journal of Agricultural Economics, Oct.-Dec. 1964.
- Ladejinsky, Wolf (1969): 'The Green Revolution in Punjab: A Field Trip', EPW, June 28, 1964.
- Lahiri, R.K. (1970): 'Impact of HYVP on Rural Labour Market', EPW, September 26, 1970.
- Lenin, V.I.: CW\* Vol. 1 (1963), CW Vol. 3(1964), CW Vol. 4(1964), CW Vol.16 (1967), CW Vol. 22(1964), Moscow.

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\* CW, here, denotes Collected Works.



- Lewis, W.A. (1954): 'Economic Development with Unlimited Supplies of Labour', The Manchester School, May 1954.
- (1958): 'Unlimited Labour: Further Notes', The Manchester School, Jan. 1958.
- Loehlin, Clinton H. (1971): The Granth of Guru Gobind Singh and Khalsa Brotherhood (Lucknow Publishing House, Lucknow, 1971).
- Marx, K. (1974): Capital, Vol. 1, Moscow, 1974.
- Mazumdar, Dipak. (1963): 'On the Economics of Relative Efficiency of Small Farmers', Economic Weekly, Special No. 1963.
- (1965): 'Farm Size and Productivity', Economica, May 1965.
- Nath, Kamla (1970): 'Female Work Participation and Economic Development - A Regional Analysis', EPW, May 23, 1970.
- Patnaik, Utsa (1971a): 'Capitalist Development in Agriculture - A Note', EPW, Sep. 1971.
- (1971b): 'Capitalist Development in Agriculture - A Further Comment', EPW, Dec. 1971.
- (1972a): 'Capitalist Development in Agriculture', Social Scientist, No. 2 and 3, (Sep., Oct. 1972).
- (1972b): 'Economics of Farm Size and Farm Scale: Some Assumptions Reexamined', EPW, Special No. 1972.
- (1972c): 'On the Mode of Production in Indian Agriculture: A Reply', EPW, Sep. 1972.
- (1973): 'Capitalist Development in Agriculture', Social Scientist, No. 13, August, 1973.
- Rani, Usha (1971): 'Size of Farm and Productivity', EPW, June 26, 1971.
- Rao, A.P. (1967): 'Size of Holding and Productivity', EPW, Nov. 11, 1967.
- Rao, R.S. (1970): 'In Search of a Capitalist Farmer', EPW, Dec. 1970.
- Rudra, Ashok (1968a): 'Farm Size and Yield per Acre', EPW, Special No. July 1968.
- (1968b): 'More on Returns to Scale in Indian Agriculture', EPW, Oct. 26, 1968.

- Rudra, Ashok (1969a): 'Big Farmers of Punjab', EPW, Sep. 1969.
- (1969b): 'Big Farmers of Punjab', EPW, Dec. 1969.
- (1970): 'In Search of a Capitalist Farmer', June 1970 (EPW).
- (1971): 'Capitalist Development in Agriculture: A Reply', EPW, Nov. 1971.
- (1973): 'Allocative Efficiency of Indian Farmers: Some Methodological Doubts', EPW, Jan. 20, 1973.
- Saini, G.R. (1969): 'Farm Size, Productivity and Returns to Scale', EPW, June 28, 1969.
- (1971): 'Holding Size, Productivity and Some Aspects of Indian Agriculture', EPW, June 26, 1971.
- (1972): 'Farm Size and Productivity: A Fresh Look', EPW, June 24, 1972.
- Sau, Ranjit (1973): 'Political Economy of Indian Agriculture: What is it all about?' EPW, May 19, 1973.
- Schultz, Theodore (1964): Transforming Traditional Agriculture, Yale University Press, New Haven, 1964.
- Sen, A.K. (1962): 'An Aspect of Indian Agriculture', The Economic Weekly, Annual No. Feb. 1962.
- (1964a): 'Size of Holding and Productivity', The Economic Weekly, Annual No. Feb. 1964.
- (1964b): 'Reply to Comment by Agarwala', The Economic Weekly, May 2, 1964.
- (1966): 'Peasants and Dualism with or without Surplus Labour', Journal of Political Economy, Oct. 1966.
- Sharma, A.C. (1966): 'Man Power Requirements of Punjab Farms', Man-Power Journal, Oct. 1965-March 1966.
- (1967): 'Employment and Wage Structure of Farm Labour in Punjab', Man-Power Journal, Jan.-March 1967.
- Singh, Pritam (1976): 'The Question of Mode of Production and the Indian Debate on Capitalism in Agriculture: Some issues Examined' (unpublished).
- Studies in the Economics of Farm Management, Punjab, W. Bengal (1954-55).
- Thorner, Daniel and Thorner, Alice (1956): 'The Agricultural Labour Enquiry: Reflections on Concepts and Methods,'

The Economic Weekly, Special Number  
June 23, 1956 reprinted in Thorner's;  
Land and Labour in India, (Asia  
Publishing House, Bombay, 1974).

Thorner, Daniel and Thorner, Alice (1957): 'Employer-Labourer Relation-  
ships in Agriculture',  
Indian Journal of Agricultural  
Economics, April-June 1957,  
reprinted in Land and Labour...  
op. cit.

----- (1967): The Statesman, Nov. 1, 2, 3, 4, 1967.

----- (1969): 'Capitalism in Indian Agriculture', EPW, Dec. 1969.

Wiser, W.H. (1958): The Hindu Jajmani System (Lucknow: Lucknow Publishing  
House, 1958).