Chapter 5

INTERPERSONAL COMMUNICATION IN THE AGRICULTURAL DEVELOPMENT

This chapter discusses the interpersonal patterns of communication in agricultural development in the four villages. Interpersonal communication or face to face communication is a primary and inevitable part mostly of primitive and rural societies. But one cannot deny the strength of interpersonal communication in modern society as well. The phenomenon of interpersonal communication on farm information, a village cannot be viewed in isolation. It is a part of the whole communication network of farm information flow which may be called as "agricultural communication system". In fact, the information on improved farm practice reaches the individual farmers through a long chain of communication linkage; viz., from cosmopolitan channels to progressive farmers or opinion leaders and from there through a web of word of mouth to other farmers of a village (Singh 1965; Shankariah 1969; Singh 1973; Appa Rao 1975). In the context of village level communication of agricultural information, Gaikwad et al. (1973) indentified three closely connected circuits of agricultural information flow - one is external to social system, another which joins the village social system and the third only which is internal to the village social system and involves intricate operations of key power wielders and opinion leaders as well as other sub-groups or factor leaders. Once the information enters the village, the opinion leaders play an important role in the diffusion process within the social system. In most of the cases, the first receivers are the opinion leaders who serve as primary source of farm information and influence for the followers in the adoption process. The opinion leaders may transmit the information either at their own initiative (which is called information giving) or at an initiative of the followers (which is called information seeking). The most usual occurrence is their leaders for information seeking in which the followers approach and advise on matters of farm problem (Sen 1969; Rogers with Svenning 1969; Gaikward et al; 1974). Interpersonal diffusion is characterized by greater degree of homophily in traditional rather than in modern system. In this chapter interpersonal communication is broadly divided into two categorizes; namely, formal and informal. Formal communication includes communication with agricultural extension officials, village level workers, NGO workers etc. and informal communication includes

friends, neighbours, relatives, family members, local seed dealers etc. Although the nature and level of communication among different villages varies one village to another, but these types of face to face communication are common to all. They communicate all the issues including agriculture through face to face communication. Here, interpersonal communication pattern is analysed through agricultural inputs like seeds, fertilizers, pesticides, insecticides, irrigation, marketing and production.

Communication of Seed-related Information

Seeds are the key input for agriculture and account for a substantial portion of crop productivity. Seeds are also one of the vehicles through which research results are transmitted from science to farmers. The quantity and quality of seeds are always of paramount consideration for agricultural growth and development in developing counties. For instance, quality rice seeds account for about 15-25 percent of rice productivity in any country. Nevertheless, the poor performance of seed production and distribution is one of the constraints to achieve sustainable agricultural development in many of the least developed countries (World Bank 2007). The following table shows the sources of seeds in the four villages:

Table 5.1
Sources of Seeds-related Information in Families of the Villages
(Percentage in Parentheses)

Source of seeds Information	Charal N=49	Bhuyan N=49	Lahdoigarh N=95	Borbahoni N=66	Total N=259
Friends	30(61.22)	31(63.26)	95(100)	66(100)	222(85.71)
Neighbour	49(100)	49(100)	95(100)	66(100)	259(100)
Relatives	12(24.48)	8(16.32)	5(5.26)	9(13.63)	34(13.12)
Agricultural Offices	7(14.28)	14(28.57)	5(5.26)	2(3.03)	28(10.81)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that over four fifths (85.71%) of the villagers got information from friends. Besides, other information including agriculture, all of them got from neighbours. Over one tenth of families (13.12%) got seed related information from relatives or acquaintances. Another one tenth (10.81%) of the families used agricultural offices to source the information.

Thus, most of families got seeds informations from neighbours and friends in the four villages than other sources like relatives, agricultural offices etc.

Sources of seed procurement are different in the four villages, which can be divided into three categories; namely, preserved seeds and market as well as preserved seeds. The following table shows the distribution of the villagers into procurement of seeds:

Table 5.2
Sources of Seed Procurement in Families of the Villages
(Percentage in Parentheses)

Seed Procurement Source	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Preserved Seeds	39 (79.59)	35(71.43)	60(63.15)	52(78.79)	186(71.82)
Market as well as preserved seeds	10(20.40)	14 (28.57)	35(36.84)	14 (21.21)	73(28.18)
Total	49 (100)	49 (100)	95(100)	66 (100)	259(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that in the four villages nearly three fourths (71.82%) of the agricultural families used preserved seeds and 28.18% used the seeds purchased from market as well as their preserved seeds.

In Charal, nearly four fifths (79.59%) of the families used their own preserved seeds and over one fifth (20.40%) of them used the seeds purchased from market as well as preserved seeds. In Bhuyan, nearly four fifths (71.43%) used their own home preserved seeds and three fifths (28.57%) procured from the market as well as their home preserved seeds. 63.15% in Lahdoigarh used preserved seeds and 36.84% used seeds from market as well as preserved seeds. In Borbahoni four fifths (78.79%) of the families used preserved seeds and 21.21% used seeds purchased from market.

So, it shows that they use different seeds from different channels through communication with one another. Village level discussions have taken important role in seeds communication. Generally they discuss which types of seeds that they have planted in this year and why? The villagers express their own experiences to adopt a particular kind of breed. They use more preserved seeds than market. It sometimes shows lack of risk taking behaviour towards new seeds. As most of villagers are marginal and small landholders they do not want to take risk to apply a new seeds in their fields. Only friends and neighbours can motivate them to adopt these new seeds.

Communication with officials also shows the role of formal interpersonal communication in agriculture. Although agricultural officials are helpful to farmers in

many parts of India as well as in Assam, but communication with officials is very limited in the four villagers. The following table shows the communication with officials regarding seeds.

Table 5.3
Visits to the Block Development Office for New Seeds among Families in the Villages (Percentage in Parentheses)

Visit to BDO Office	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Yes	7(14.28)	14(28.57)	5(5.27)	2(3.03)	28(10.82)
No	42(85.72)	35(71.43)	90(94.73)	64(96.97)	231(89.18)
Total	49 (100)	49 (100)	95(100)	66 (100)	259(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that only one tenth (10.82%) of families visit block development as well as agricultural office for communication. Majority of them (89.18%) do not visit for seed information. Information seeking from officials shows a bit high (28.57%) in Bhuyan than other three villages: Charal (14.28%), Lahdoigarh (5.27%) and Borbahoni (3.03%).

Agriculture officers do not visit the villages regularly due to shortage of staff. However, a very few of them visit the villages for giving some information regarding seeds. The visits of agricultural officers/staff to the villages are divided into three categories; viz., (i) monthly, (ii) bi-monthly and (iii) seasonal. The distribution of their visits is shown in the following table:

Table 5.4
Frequency of Agricultural Officials' Visits to the Villages
(Percentage in Parentheses)

Visit Frequency of Officials	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
	No. of Visit	No. of Visit	No. of Visit	No. of Visit	
Monthly	1(16.66)	1(14.28)	--	--	2(11.76)
Bi-monthly	2(33.34)	2(28.57)	1(50)	1(50)	6(35.29)
Seasonal	3(50)	4(57.14)	1(50)	1(50)	9(52.95)
Total	6(100)	7(100)	2(100)	2(100)	17(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that half (52.95%) of the total visits are found seasonal, whereas over one third (35.29%) of the visits of the officials are found bi monthly. In Bhuyan, 57.14% and 50%, each, in Charal, Lahdoigarh and Borbahoni are visited by officials in a season. Of the total 50% of the visits are in Lahdoigarh and Borbahoni.

So, visits of the officials are much more in Bhuyan and Charal village due to habits of information seeking behaviours of the farmers.

Thus, the communication on seeds shows the importance of interpersonal communication, i.e., informal sources, is valued for agricultural development.

Fertilizers and Communication

Fertilizer is another important input for agricultural development. Although the previous chapter shows that farmers of Assam have not so much knowledge on utilization of fertilizers on cultivated fields yet the districts like Nagaon, Barpeta, Goalpara, Dhubri and Tinsukia have good consumption of fertilizer on their fields. Now-a-days almost all the districts as well as villages are using fertilizer for more production. Farmers' places of buying fertilizer in the four villages are shown in the following table:

Table 5.5
Fertilizers Purchase in Families of the Villages
(Percentage in Parentheses)

Place of Fertilizer Purchase	Charal				Bhuyan				Lahdoigarh				Borbahoni				Total
	Marginal	Small	Large	Total	Marginal	Small	Large	Total	Marginal	Small	Large	Total	Marginal	Small	Large	Total	
Amguri	--	48 (100)	1 (100)	49 (100)	18 (100)	16 (100)	15 (100)	49 (100)	20 (83.33)	65 (100)	6 100)	86 (90.52)	--	3 (16.66)	--	3 (4.55)	187 (72.20)
Chutia Basti	--	--	--	--	--	--	--	--	--	--	--	--	4 (8.51)	2 (11.11)	--	6 (9.09)	6 (2.31)
Halwating	--	--	--	--	--	--	--	--	4 (16.67)	--	--	9 (9.48)	35 (74.46)	10 (55.56)	1 (100)	46 (69.69)	55 (21.23)
Dopdar	--	--	--	--	--	--	--	--	--	--	--		8 (17.03)	3(16.67)	--	11 (16.67)	11 (4.24)
Total	--	48 (100)	1 (100)	49 (100)	18 (100)	16 (100)	15 100)	49 (100)	24 (100)	65 (100)	6 (100)	95 (100)	47 (100)	18 (100)	1 (100)	66 (100)	259 (100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that nearly three fourths (72.20%) of the families purchase fertilizers from Amguri town and a few (2.31%) of them purchase it from Chutia Basti. Over one fifth of families i.e. 21.23% bring fertilizer from Halwating and a few (4.24%) purchase it from Dopdar Chariali. The size of land holding does not seem to matter in buying of fertilizer from different places. Generally, they prefer buying it from Amguri town or a wholesaler than a village retailer but sometimes due to time and transportation contraints they buy it from local stockers.

Thus, it seems that majority of families purchase fertilizer from wholesalers of Amguri town because of low price than other places.

The villagers are getting information on fertilizers from different sources as all the villages are not so far from urban centres and contacts. Now the villagers' information sources are divided on the basis of size of land holding in the villages. Information sources are categorized into six groups namely, friends, neighbour, relatives, agricultural offices, local dealer and mass media. The following table shows the details of villager's source on fertilizers:

Table 5.6
Sources of Fertilizers by Landholding Size among Families in the Villages
(Percentage in Parentheses)

Name of Sources	Charal				Bhuyan				Lahdoigarh				Borbahoni						Grand Total	
	Marginal	Small	Large	Total	Marginal	Small	Large	Total	Marginal	Small	Large	Total	Marginal	Small	Large	Total	TotalMarginal	TotalSmall	TotalLarge	
Friends	--	21 (43.75)	--	21 (42.86)	3 (16.66)	5 (31.25)	4 (26.66)	12 (24.48)	11 (45.83)	17 (26.15)	2 (33.34)	30 (31.57)	18 (38.29)	7 (38.89)	1 (100)	26 (39.39)	32 35.95)	50 (34.01)	7 (30.44)	89 (34.37)
Neighbour	--	6 (12.5)	1(100)	7 (14.29)	10 (55.56)	5 (31.25)	2 (13.33)	17 (34.69)	12 (50)	20 (30.77)	1 (16.66)	33 (34.74)	12 (25.53)	3 (16.66)	--	15 (22.73)	34 (38.21)	34 (23.12)	4 (17.39)	72 (27.79)
Relatives	--	--	--	--	--	--	--	--	1 (4.17)	5 (7.69)	--	6 (6.32)	4 (8.51)	--	--	4 (6.07)	5 (5.62)	5 (3.40)	--	10 (3.87)
Agricultural Offices	--	5 (10.41)	--	5 (10.20)	--	--	6 (40)	6 (12.25)	--	--	--	--	--	--	--	--	--	5 (3.40)	6 (26.09)	11 (4.25)
Local Dealer	--	13 (27.08)	--	13 (26.53)	5 (27.78)	2 (12.5)	--	7 (14.29)	--	21 32.31)	3 (50)	24 (25.27)	12 (25.53)	8 (44.45)	--	20 (30.30)	17 (19.10)	44 (29.93)	3 (13.04)	64 (24.71)
Mass Media	--	3 (6.25)	--	3 (6.12)	--	4 (25)	3 (20)	7 (14.29)	--	2 (3.08)	--	2 (2.10)	1 (2.12)	--	--	1(1.51)	1 (1.12)	9 (6.12)	3 (13.04)	13 (5.01)
Total	--	48 (100)	1(100)	49(100)	18 (100)	16 (100)	15 (100)	49 (100)	24 (100)	65 (100)	6 (100)	95 (100)	47 (100)	18 (100)	1 (100)	66 (100)	89 (100)	147 100)	23 (100)	259 (100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that majority of families (34.37%) got information from friends which is highest in Lahdoigarh (31.57%) and over one fourth (27.79%) of families got fertilizer information from neighbour. A very few (3.87%) of families use relatives as source followed by agricultural offices (4.25%) and mass media sources (5.01%). Information from local stockist or dealer shows comparatively higher (24.71%) than other sources.

It also shows that, among all the sections of farmers, friends play an important role in communication. Thus, friends are always helpful to the villagers to get information on fertilizers. They share information through different gossips' centres, evening discussions or even their meets on cultivated fields at the time of tilling, transplanting or growing stages. They discuss (male farmers) about growing price, low qualities of fertilizers etc. on their various meets. The farmers who are experts on agriculture (economically, size of landholdings, educated) diffuse new information collected from various sources especially, newspaper, agricultural offices etc.

Now, insecticides are important modern agricultural inputs for more production. The villagers normally do not use insecticides until they face serious problems from insects. But the villagers having small tea gardens use it regularly. The main sources of information on use of insecticides are shown in the following table:

Table 5.7
Sources of Insecticides among Families in the Villages
(Percentage in Parentheses)

Source of Insecticides	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Friends	3(30)	4(22.22)	3(37.5)	4(36.36)	14(29.79)
Neighbours	--	2(11.12)	2(25)	2(18.18)	6(12.77)
Local Dealer	7(70)	12(66.66)	3(37.5)	5(45.46)	27(57.44)
Total	10(100)	18(100)	8(100)	11(100)	47(100)

Source: Field Data Collected from the Villages during March/April 2011

The distribution of families by sources of insecticides in the table shows that majority of the families (57.44%) have got insecticides' information from local dealers. Around nearly one third (29.79%) of them have got information through friends and over one tenth (12.77%) have got it through neighbours.

Thus, local dealer helps the villagers by giving information on various insecticides when they face problem, by discussing with friends or sometimes directly visiting to the shops to buy miticides, eldex, phuraton etc. Generally, salesman

(medicine store) of the shop describes the method of use and effects on production etc. The families of the villages trust them and use in their cultivated field.

To identify the weeds' problem faced by the families during cultivation in the four villages, it is classified into three categories such as high problem, medium problem and low problem according to the families' response. The high weeds like- *dol ghah, puni, bilohoni, kolmou (icchornia), meteka* (water hygein), medium weeds like- *lospossi, leheti, longbon* and low weeds –*hohoni, kohila* create problems in the four villages. The categorization of these weeds is made on the basis of the depth of roots on the cultivated ground. The distribution of families in the four villages is given in the following table:

Table 5.8
Weeds Problem among Families in the Villages
(Percentage in Parentheses)

Weeds Problem	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
High	21(42.86)	22 (44.89)	34 (35.79)	27 (40.90)	104 (40.16)
Medium	18(36.73)	21 (42.86)	32 (33.69)	29 (43.94)	100 (38.61)
Low	10(20.41)	6 (12.25)	29 (30.52)	10 (15.16)	55 (21.23)
Total	49 (100)	49 (100)	95 (100)	66 (100)	259 (100)

Source: Field Data Collected from the Villages during March/April 2011

The data indicate that of the total families facing weeds problem in the four villages 40.16% families have high level of the problem, 38.61% have medium and the rests (21.23%) have low level. In Charal, of the total families 42.86% have high level, 36.73% have medium level and 20.41% have low level. In Bhuyan, 44.89% families have high level, medium level (42.86%) and low level (12.25%). Similarly, in Lahdoigarh, 35.79% have high level, medium (33.69%) and low (30.52%) problem. In Borbahoni 43.94% of the families have medium level, 40.90% have high level and 15.16% low level of the problem.

Thus, families of Lahdoigarh, followed by Borbaoni, bhuyan and Charal are facing weeds' problem. Problems of weeds depend on types of soil. So, farmers need to concentrate more to tackle this problem.

Of the four villages, Charal (1 family) and Borbahoni (11 families) have small tea gardens. It is found that all these families use chemicals to control weeds in the tea gardens.

Moreover; friends, neighbours and small shop dealers are the sources of chemical information among the owners of tea garden. The chemicals such as-Round-up, Dasis, Thiodine use as weedicides. Generally, the process or methods of killing weeds are same. The families of Borbahoni are more expert in this regard because they know the techniques from the nearest Halwating Tea Garden workers as some of families work in company tea garden as a part time labours. All the families in Borbahoni use a mix of Round-up, Thiodine and Urea (2.50gm per 16 ltr.) and spray it on ground. Some informations such as-ploughing, lifting leaves, cutting, breeding seeds, storing, selling and shadowing are known from parmenant tea garden workers (experience holders) on their visits to the village. The farmer families also take it as important for high production.

The distribution of families into these sources of information in the villages is given in the following table:

Table 5.9
Sources of Information on Weedicides among Families in the Village
(Percentage in Parentheses)

Sources of Weedicide Use Information	Charal N=1	Borbahoni N=11
	No. of Tea Garden Holders	No. of Tea Garden Holders
Friends	1 (100)	11 (100)
Neighbours	1 (100)	3 (27.27)
Small Dealer	1 (100)	11 (100)

Source: Field Data Collected from the Villages during March/April 2011

The data indicate that in Charal; friends, neighbours and small dealers are the sources of information on chemical use to control weeds. In Borbahoni, of the 11families using chemical in tea gardens, all the families are getting information from friends and small dealers and neighbours.

In the four villages, agricultural matters such as seeds, HYV, management of labours and implements of ploughing, irrigation are discussed among friends, neighbours, relatives and fellow farmers for increasing production. The distribution of families by those with whom they often share agricultural information is given below:

Table 5.10
Categories of Farmers Sharing Agricultural Information in Families of the Villages
(Percentage in Parentheses)

Category of Farmers	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Friends	27 (55.10)	32 (65.30)	47 (49.48)	40 (60.60)	146 (56.37)
Neighbour	13 (26.53)	9 (18.37)	38 (40.00)	19 (28.79)	79(30.51)
Relatives	3 (6.12)	--	8 (8.42)	3 (4.54)	14 (5.41)
Fellow Farmers	6 (12.25)	8 (16.33)	2 (2.10)	4 (6.07)	20 (7.71)
Total	49 (100)	49 (100)	95 (100)	66 (100)	259 (100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that majority (56.37%) of the villagers discuss with their friends followed by neighbours (30.51%), fellow farmers (7.71%) and relatives. By village 60% of the villagers in Bhuyan and Borbahoni villages and 50% of the families in Charal and Lahdoigarh village discuss with friends.

Two fifths (40%) of the families in Lahdoigarh discuss agricultural matters with neighbours whereas 28.79% of families in Borbahoni 26.53% in Charal and 18.37% in Bhuyan discuss the matters with their neighbours. Discussion with their relatives on agricultural matters is not found high. Only 8.42% of the families in Lahdoigarh and 6.12% in Charal discuss the matters with their relatives. It happens through various channels also such as traditional media. 4.54% of the families in Borbahoni discuss the matter with their relatives. Fellow farmers also share agricultural information to 16.33% of the families in Bhuyan, 12.25% in Charal, 6.07% in Borbahoni and 2.10% in Lahdoigarh.

The traditional media (*Bhauna, Naam Prakhang, Utsav, Bihu etc.*) play an important role as it is closely related to social structure of rural society. Traditional media play as strong channels in forms of communication. Their communication in these occasions helps to get new information. The farmers help their fellow villagers by giving messages when they meet in the villages. Fellow farmers get information from government officials or from Krishak bondhu and later on they disseminate it to other families in the four villages.

Irrigation and Communication

Irrigation is key factor for agricultural development. Communication on irrigation matters mostly happens in paddy fields, religious functions and other meets by the villagers. The major irrigational sources in the villages are river water. On the basis of mutual understanding with their neighbouring cultivators, the villagers irrigate their land at the stage of transplantion and sowing or growing of crops. The villagers do not pay too much attention to irrigate the land in dry time. Irrigation nearly depends on rain as the villagers have not enough income or size of land holding to make investment on irrigation. Government schemes are still not touching any of the villages for initiating irrigation. But in Bhuyan a pump set has been installed to grow Arize 6444 breed of (rice) with the help of these agriculture Department. The department has selected 100 bighas for cropping hybrid seeds. The beneficiary of this programmes communicate with officials and officials also taught them how to grow and maintain crops at various stages. These interpersonal meetings direct the villagers to grow more quality products. So frequency of communication with the officials is higher in Bhuyan than in other three villages.

Marketing of Production

Market is an important place for face-to- face communication among farmers. Generally the villagers' views on irrigation, market price, growing price of fertilizers and crop diseases are discussed in informal meetings. Weekly market is main place to discuss these types of views especially on paddy and vegetables. The communication of market and production regarding is shown in the following table:

Table 5.11
Sources of Information on Markets
(Percentage in Parentheses)

Information on Markets	Charal N=49	Bhuyan N=49	Lahdoigarh N=95	Borbahoni N=66	Total N=259
Friends	11(22.44)	12(24.49)	34(35.78)	15(22.72)	72(27.79)
Neighbours	20(40.81)	21(42.85)	45(47.37)	32(48.49)	118(45.55)
Relatives	06(12.25)	05(10.21)	14(14.74)	15(22.73)	40(15.44)
Fellow Farmers	09(18.37)	05(10.21)	2(2.11)	--	16(6.17)
Block	03(6.13)	06(12.24)	--	4(6.06)	13(5.01)
Total	49(100)	49(100)	95(100)	66(100)	259(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that majority of the families (45.55%) have got information from neighbours. Over one fifth (27.79%) of the families have known about information from friends whereas over one tenth (15.44%) of families got information from relatives followed by the fellow farmers (6.17%) and block or other offices (5.01%).

In Borbahoni village, out of total 66 families who need agricultural information on markets and production over two fifths (48.49%) of families got information from neighbour followed by relatives (22.73%), friend (22.72%) and block (6.06%).

The families of Lahdoigarh village also get information from neighbour (47.37%), friends (35.78%), relatives (14.74%) and fellow farmers (2.11%).

In Bhuyan village, over one tenth (24.49%) of families get information from friends, (42.85%) from neighbour and fellow farmers (10.21%) and fellow farmers (12.24%).

Two fifth (40.81%) of families get sources of information from neighbours whereas over one fifth (22.44%) of families get information from friends, followed by relatives (12.25%), fellow farmers (18.37) and officials (6.13%).

Thus, friends and neighbour play an important role as sources of agricultural market information in all the four villages.

Agricultural Implements and Communication

Use of Traditional Implements

The villagers' communication also happens through exchange or making traditional implements in the villages. Generally, wood and bamboo products are used as traditional implements in agriculture in Assam. There is very little use of materials other than wood and timber, except a piece of iron *phal* and the iron cover of the cartwheel. The following are the implements found in the four villages:

Nangal (Traditional Plough):*Nangal* or *Desi* plough is used for tilling operations including pulling for transplantation. Bullocks drive this implement.

Moi (Bamboo Ladder): *Moi* is used for leveling and breaking clods. Bullock drives this.

Juonli: *Juonli* is a device made of bamboo. It is used to pull the *Nangal* by using a bullock or buffalo.

Hoe: Hoe, Kor, or *Kodal* is an important associated tillage implement. Hoe or *kor* is mainly used in small-scale cultivation of vegetables etc. It is also used for bunding of the paddy fields.

Jabaka: It is used for weeds removing from the cultivated land by using wood and timber instead of bamboo teeth (sometimes bamboo teeth are used).

Phoi (Xut-jori): *Phoi* is a hard cord made of jute. It is used to fix the *Ihmari* on the *Juonli* side.

Sholmari: Split-bamboo device like rods to hole the neck of the bullock in just place of *Juonli.*

Dolibhanga or *Dolimorah*: *Dolibhanga* or *Dolimorah* is a wood and bamboo device with a heavy piece of wood to hit the soil to make it smooth.

Sickles: It is used to cut paddy at harvesting.

Size of Landholdings and Communication

The landholding size in the four villages has been divided into four categories; namely, the landless, the marginal landholders (3.5-7.5 bighas), the small land holders (7.5-15 bighas) and the large land holders (more than 15 bighas). The distribution of the families of the villages divided into these categories is shown in the following table:

Table 5.12
Landholding among Families in the Four Villages
(Percentages in Parentheses)

Land (in bighas)	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Landless	06(10.91)	03(5.77)	20(17.39)	35(34.66)	64(19.81)
Marginal (3.5-7.5)	--	18(34.62)	24(20.87)	47(46.53)	87(26.94)
Small (7.5-15)	48(87.28)	16(30.76)	65(56.53)	18(17.82)	147(45.52)
Large (15+)	01(1.81)	15(28.85)	06(5.21)	01(0.99)	23(7.13)
Total	55(100)	52(100)	115(100)	101(100)	323(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that over two fifths (45.52%) of the families are in the category of small landholding having 7.5-15 bighas of land, over one fourth (26.94%) are marginal landholders and 7.13% are large landholders. Besides, about (19.81%) two fifths of the families are landless whose largest section (34.66%) is found in Borbahoni village.

In Charal, 87.28% families are found to have small landholding, 1.81% large and 10.91% landless families. In Bhuyan, majority (34.62%) of families are marinal, 30.76% small, 28.85% large and 5.77% are found landless families. Over half (56.53%) of them are small, 20.87% marginal, 17.39% landless and 5.21% families are found in Lahdoigarh village. Over two fifth (46.53%) of marginal, 34.66% of landless, 17.82% of small and 0.99% of large landholders are found in Borbahoni village.

Thus, landholding size shows that majority (45.52%) of the families have small size of land in the four villages.

However, total land of the villagers are categorised into three groups; namely household land, cultivated land and uncultivated land. The following table shows this:

Table 5.13
Types of Land of Families in the Villages
(Percentages in Parentheses) in *bighas*

Type of Land	Charal	Bhuyan	Lahdoigarh	Borbahoni	Total
Households land	26(5)	25(4.44)	90(11.58)	50 (11.85)	191(8.37)
Cultivated land	489(94.04)	516(91.48)	673(86.61)	358 (84.83)	2036(89.18)
Uncultivated land	05(0.96)	23(4.08)	14(1.81)	14(3.32)	56(2.45)
Total	520(100)	564(100)	777(100)	422 (100)	2283(100)

Source: Field Data Collected from the Villages during March/April 2011

The table shows that the total four fifths (89.18%) of the land are cultivated, 8.37% of household land and 2.45% of land is uncultivated land or forest land. In Borbahoni, 84.83% of cultivated, 11.85% of households and 3.32% of uncultivated land are from the distribution in village. There are found 86.61% of cultivated land followed by household land (11.85%) and uncultivated (1.81%) land. 91.48% of cultivated land, 4.44% of household and 4.08% of uncultivated land are found in Bhuyan village. In Charal, 94.04% of families have cultivated and 5% of these have household land and 0.96% of families have uncultivated land are found. Thus, Charal (0.96%) has less uncultivated land than Bhuyan village (4.08%), Borbahoni (3.32%) and Lahdoigarh (1.81%).

The school teachers are other important officials to disseminate new information, values and norms of behaviour to the children and others in the villages. During the field work it was noticed that the behaviour of the children, their way of speaking, attitudes towards polio campaign, vaccination etc. are quite informative and communicative.

Now, a brief summary of the major patterns of the interpersonal communication of the farmer families in agricultural development is given below:

1.Friends and neighbours are important source for seeds in the four villages. Over four fifths (85.71%) of the families got information from friends. Besides, all of them got all kinds of information, including agriculture from neighbours.

2. Nearly three fourths (71.82%) of the agricultural families used preserved seeds and 28.18% used the seeds purchased from market as well as their preserved seeds.

3. Farmer families use different seeds from different channels through communication with one another. Village level discussions have taken important role in seeds communication. Generally they discuss the types of seeds that they have sown in this year and reasons for that. The villagers express their own experiences to adopt a particular kind of breed. They use more preserved seeds than market. It sometimes shows lack of risk taking behaviour towards new seeds. As most of farmers' are marginal and small landholders they do not want to take risk to apply a new seeds in their fields. Only friends and neighbours can motivate them to adopt these new seeds.

4. One tenth (10.82%) of the families visit block development as well as agricultural office for communication. Majority of them (89.18%) do not visit for seeds' information. Information seeking from officials is a bit higher (28.57%) in Bhuyan than in other three villages: Charal (14.28%), Lahdoigarh (5.27%) and Borbahoni (3.03%).

5. Half (52.95%) of the total visits are found seasonal, whereas over one third (35.29%) of the visits of the officials are found bi-monthly. visits of the officials are much more in Bhuyan and Charal village due to farmers' habits of information seeking behaviours.

6. Nearly three fourths (72.20%) of the families purchase fertilizers from Amguri town and a few (2.31%) of them purchase it from Chutia Basti. Over one fifth of families i.e. 21.23% bring fertilizer from Halwating and a few (4.24%) purchase it from Dopdar Chariali. The size of land holding does not seem to matter in buying of fertilizer from different places. Generally, farmers' prefer to buy it from Amguri town or a wholesaler than a village retailer; but sometimes due to time and transportation constraints they buy it from local stockers in the four villages.

7. Majority of the families (34.37%) got information on fertilizers from friends and over one fourth (27.79%) of families got fertilizer information from neighbour which is highest in Lahdoigarh. A very few (3.87%) of families use relatives as source followed by agricultural offices (4.25%) and mass media sources (5.01%). Information from local stockist or dealer is shown comparatively higher than (24.71%) other sources.

8. Local dealer helps the farmers by giving information on various insecticides when they face problem, by discussing with friends or sometimes directly visiting to the shops to buy miticides, eldex, phuraton etc. Generally, salesman (medicine store) of the shop describes the method of use and effects on production etc. The families of the four villages trust them and use in their cultivated field.

9. Friends and neighbours play an important role as sources of agricultural market information in all the four villages. Besides, landholding size shows that majority (45.52%) of the families have small size of land in the four villages.

10. The school teachers are other important officials to disseminate new information, values and norms of behaviour to the children and others in the villages. During the field work it was noticed that the behaviour of the children, their way of speaking, attitudes towards polio campaign, vaccination etc. are quite informative and communicative.

In sum, friends and neighbours play an important role as interpersonal mode of agricultural communication in the four villages. Information on seeds, fertilizers, irrigation, insecticides, pesticides, market and in production, mostly communication happens through interpersonal modes within and outside the village. So, interpersonal communication is found stronger than other modes of communication in agriculture.