

CHAPTER XVI

CONCLUSION

The planning of land must start from the present position and should be based on a careful, objective and detailed survey and interpretation of that present position. The basic need of mankind must be satisfied by a proper use of land. There are six basic needs of man which involve the use of land for their satisfaction. We may list them as food, shelter, work, recreation, movement and security. In essence land planning is the right and balanced allocation of land between rival claimants. Each rival claimant may present a good case, yet each may well be required to lower its requirements in the interest of the community as a whole. The planner's task is to determine the optimum use, in the national interest, of every hectare of land.

The author has selected twelve villages for intensive survey. The criterion for the selection of these villages has already been discussed in the preceding chapter. Land utilisation in this district is mostly governed by the structure, relief, drainage, climate, soil and under-ground water. In the Sirmour, Hazur and Manganj Tahsils the rivers

and rivulets flowing through the area cause heavy soil erosion on the sloping land of the plateau and hilly tract. Sheet erosion renders the land surface into waste land. Fields, which are not bunded, do not permit regular cropping for a long time. This soil requires rest after every two or three years for the recoument of fertility. The most notable fact, therefore, in regard to land utilization is that an agricultural plot is generally cultivated only once a year. The Teonther Tahsil largely comprises a plain tract with only gentle slopes here and there.

Climate is one of the most effective geographical factors which influence the utilization of land. It exerts its influence, through rainfall and temperature. The variability of rainfall directly affects land use. In the average rainfall years the average yield per hectare may be pretty. In the years of high or low average rainfall the per hectare yield diminishes. Variations in rainfall are a common occurrence in this district. One year it rains heavily and in another there is practically a drought condition, and in either case the yield per hectare naturally remains low. Very seldom is a good harvest raised. Let us suppose a year when the monsoon breaks out rather early and also retreats early, in these conditions the 'kharif' crop does not ripen well and, on account of the deficiency of moisture in the soil, the sowing of the 'rabi crop' is also adversely affected. Consider another year when the rains are

excessive throughout the rainy season; then too too the 'kharif crop' is adversely affected, and this in turn falls upon the 'rabi crop' also, because the large quantity of moisture in the soil at the time of the 'rabi' sowing greatly reduces the scope of germination in the seed. It is a well known fact that the Rewa district is short of irrigational facilities, so it is that in drought year, cultivators suffer from famine conditions.

If it does not rain in the winter season, the 'rabi' crop hardly gives any return ; if on the other hand, there is heavy rain, several crop diseases break out and ruin the crop, particularly because insecticides are hardly in use in this district.

The fact of rainfall variation decides the crops which are to be grown and their areal distribution. In order to save their crops from complete failure, the agriculturists resort to mixed sowing, combining such seeds as differ in their requirements of moisture. In the 'kharif' season rice, Jowar, redgram, greengram, Kodon are sown mixed. If it rains heavily paddy gives a good return ; otherwise millet, is the choice of the cultivator. In the 'rabi' season wheat, gram, linseed and barley are sown mixed.

The second important factor in climate is temperature. If the climate conditions are normal during the rest of the

year, then, in the rainy season on account of persisting clouds, the temperature is not properly sustained by the crops. The growth of the plant suffers a lot and starts turning pale. In the winter season a too low temperature which does occur sometimes, causes heavy damage to the standing crop. Frost is a very common feature in the district, and this is obviously due to the lack of sufficient moisture in the soil.

Soil is the nourishing medium of remarkably varied forms of plant, animal, micro-organisms whose life activities continuously modify the non-living part of the soil and are modified by it in return. The effect of soil on the distribution of crops is evident. The prevalent black soil of the district becomes sticky in the wet monsoon months. It is a fertile soil. It retains the rain-water for a longer time and makes favourable conditions for the growth of rice. Wheat is the major crop of the 'rabi' season. Its capacity of retaining water helps in growing the wheat and linseed crops without irrigation.

Red soil is locally called the 'Parua' and the 'Rankar'. It is loamy and clayey in texture. Kodaon can be grown in this soil in the 'Kharif' season and gram during the 'rabi' season. The agricultural plots, which are hunded give on

excellent crop of paddy in the 'kharif' season, wheat and linseed in the 'rabi' season.

The alluvium in Teonthar Tahsil is a part and parcel of the Gangetic alluvium. This soil, lying on the plain is of more than average fertility. Rice and Jowar are the main crops of the 'kharif' season and gram linseed and barley of the 'rabi' season.

Double cropping is practised only in those fields, which are low lying and banded. The fields which are sown with rice in the 'kharif' season and generally resown in the 'rabi' season with wheat and linseed. The plots which have irrigational facilities are also double cropped. In the poor quality-land Kodon, Jowar, Green gram and Black gram are sown in the 'kharif' season and grain and linseed in the 'rabi' season.

The under-ground water supply system can not be introduced here due to a number of geological reasons. The most important is the structure of rocks. The district can be termed a hard rock area leaving the Teonthar Tahsil aside. The main constituent rock is sandstone. This rocky strata does not admit the free entry of water. But the little water which percolates is stored. It is the most valuable source of irrigation. The intensive use of land is not possible without the proper utilisation of this water. Geomorphologically, the

land of Rewa district is of undulating surface with local topographical depressions and elevations.

The under-ground water Table fluctuates as a result of wet and dry seasons. The water-Table shows a steady rise from the middle of July due to the monsoon rains. It is on account of this fluctuation in the water-table, that the depth of wells varies from place to place. After the middle of October, the water-table reverses its trend and starts receding. During the summers, some wells in the district become practically unserviceable and some of them supply very meagre water.

A further deepening of the wells here, is the necessity of the district. The wells may then definitely serve some useful purpose. The energised pumping sets may be fitted into these deepened wells. The financial assistance may be provided by the state government for this purpose.

The land must remain in the possession of the agricultural labourers who, actually work in the field. It is a bad luck for Rewa district that the land is mostly under the possession of the princely rulers. They hold a large hectarage of land. As a result, it is difficult for them to look after the land properly and to make the optimum use of it. The writer feels that the land-ceiling should be implemented effectively. The government of Madhya Pradesh is doing it, but

one thing should not be forgotten while effecting the ceiling and that is, the quality and productivity of the lands, as the fertility rate is different from one place to the other. A definite ceiling of land unit in the Malwa region would definitely yield more than the same unit in the Rewa district. It is felt that, the micro-regional units should be the criterion for this purpose and not the political units. Hence, an intensive regional study is very essential for the effective ceiling.

The writer's assessment of the productivity in the selected twelve villages reveals that mechanically and technically the agriculture of Rewa district is undeveloped and in some cases under-developed. The undeveloped agricultural conditions are prevailing throughout the hilly tract and plateau slopes and the under-developed conditions are prevailing in the rest of the district. The running water in rainy season has eroded the slopy land and has turned it into a waste land. The gradual sheet and gully erosion is a unrecoverable loss to the district. The clear picture of erosion can be seen along the river sides, near rivalets, the hilly slopes and the plateau slopes. The contouring and bunding alone can save out, of this situation. This method will check the soil erosion and the silt may be deposited at some suitable thickness, where agriculture may then be practised. This practice is being implemented even at present, but at a small

scale. The running water during the rainy season is collected in the bunded fields, and the silt is deposited there. The water from the reservoir is allowed to let off slowly. This land is brought under plough in the 'rabi' season. This practice is followed mainly in Hazur, Sirsaur and Manganj Tahsils. The afforestation on the hilly tract of 'Kaimur' and 'Bijain' ranges may be of great value to the region in preventing further erosion. It will also help in supplying the firewood. In Teonthar Tahsil which lies on a plain tract, the problem is not very difficult. The most feasible method of arresting the soil erosion is to construct embankments. The inhabitants of this Tahsil are very well aware of the value of this method. The field embankments have already been constructed by the prosperous farmers. It is the best prevention from the soil erosion.

The levelling of agricultural plots is the necessity for applying the scientific agricultural methods.

The author has calculated the Potential Production units (P.P.U.) for each and every village. A medium quality-land has been taken equal to 1 P.P.U. per hectare. The grand total of P.P.U. in each village has reduced due to B-medium and poor quality-land. A large number of P.P.U. can be increased by acquiring the old fallow and waste land. The levelling and bunding on the poor quality land until increase the P.P.U.

The per hectare yield of different crops in the district is abnormally low. It can very well be increased by applying the manure, the cattle dung, compost, green manure and night soil etc. The cattle dung can be easily used by the farmers, but they prefer to use it as fuel instead of using it as a manure. Though, they understand its right use, yet the shortage of firewood is the main cause which makes them use it as fuel. The plantation of firewood plants on the old fallow and waste land can solve this problem easily.

The gro-wastes, fodder wastes and other wastes can be used for preparing the compost, which is the best source of providing organic matter to the soil.

The organic matter is also provided by green manuring, which is within the easy approach of the farmers in the district. The sub-hemp is the main green manuring crop, which can be grown even in adverse climatic conditions. The green manure crop must be allowed to rot well in the water. It would otherwise adversely affect the plant growth of the 'gabi' crop.

The night soil is one of the important manures which provide organic matter to the soil, if it is used in a systematic way.

In general the soil of Rewa district is deficient in organic matter and inorganic matters. The sources of the organic matter have already been discussed in the preceding paragraph. The inorganic matter must be supplied by applying the chemical fertilizers. There is one thing which should be taken into consideration while using chemical fertilizers in the plot. The agricultural plot should first be provided with the manure and then only the chemical fertilizers should be used, so as to get the best out of them. If it is not done, the physical condition of the soil would suffer and the land would become barren in due course. The second important thing with regard to the use of chemical fertilizers is the availability of water. If it is not available as and when needed, it will adversely affect the crop. As the things stand, poverty and the lack of irrigational facilities do not allow the use of chemical fertilizers beyond a certain limit in the district. Chemical fertilizers may prove harmful, instead of being useful, if these are used without sufficient knowledge of the quantity, the relative proportions of various chemicals to be used in the soil, and the time when to use them.

Fragmentation of agricultural holding in the district is a stage of evolution in which a single farm consists of numerous discrete parcels. In the Rewa district it is associated with congestion of rural population and laws of inheritance

which prescribe distribution of property among surviving relatives according to a fixed system. The most obvious effect is to make the working of the farm unnecessarily difficult. In the fragmented agricultural fields time is wasted and extra expense involved in moving workers, animals and implements to and from the farmstead, and from one field to another and in carrying seed and manure to the various fields and harvested crop from the field to the thrashing floor. The supervision is also rendered more difficult. The expenses on bunding and sometimes access to the various fields may also be difficult.

The fragmentation is considered advantageous in certain cases. Let us suppose that a farmer has two plots, one is lying on an elevated land and the other on a low lying land. If it rains heavily he might not use his low lying plot but then, the plot on the elevated land can well be used. On the other hand if the rainfall is not satisfactory, the low lying plot might still give good return. Thus, he can ensure himself from the vagaries of rainfall. Let us take another example. If a farmer has two plots of different soils, he has the choice to grow two crops of different types. But the disadvantages of the fragmented farming are far greater than the advantages.

The type of soil, the slopes, the availability of water for irrigation and poverty are the main factors which account for the fragmented fields in the district. Every peasant wants

share in the good quality land often lying around the villages. As a consequence the plot suffers fragmentation. In a slopy land where it becomes difficult to check the running water of 'rabi' season, the bunding becomes essential at small intervals and this obviously means fragmentation of the slopy land. Such bunded and these fragmented plots are often found along the rivers in the whole district. The availability of water for irrigation is also a reason for fragmentation. Every one tries to have a plot, however small that might be, near the source of water. On account of poverty the peasants prefer to divide their fields into small fragments, because they find it very difficult to manage.

The author feels that the consolidation is the only remedy for this problem. The right assessment of soil on the basis of per hectare yield is an urgency, without which the optimum use of land in the district is not possible.

The district is lacking in the irrigational facilities. The construction of a well is very costly, and it does not return its cost as the water supply is often insufficient. The construction of bunds on a slopy relief for collecting the water is also an expensive source of irrigation. These bunds silt up after some time. In the years of heavy rains, the water overflows and is wasted. In the drought years, the bunds remain dry. In both these extremes they are unprofitable. The bunds are otherwise very useful sources of

irrigation. The same is true of the streams also. The irrigation from the streams becoming more and more popular in the district because no expense is incurred on acquiring the water, except that on the pumping set. But as regards the tanks and wells, the construction cost too, has to be incurred together with the cost of the pumping set.

The author feels that the Government may take up the lift irrigation works for which the conditions in the district are definitely favourable. These works would go a long way in wiping out poverty from the district.

The techniques of agriculture in Rewa district are still rudimentary. The country made plough, the Bakkar, the bullock cart and such other implements are used by the farmers. The mixed seeds, the lack of irrigational facilities, insecticides, chemical fertilizers and the manuring have made the agriculture of Rewa district, an extensive type of agriculture. Along with this it should not be forgotten that a few farmers are well aware of the new techniques and they are certainly getting the best out of them.

The improved cattle breed may be introduced in the district to operate the new implements. The hybrid seeds and insecticides may be used to a considerable extent.

Banks and Co-operative societies can play their role in providing the necessary credit. It is now for the rural population of the villages to come forward in order to speed up the agricultural production.

The domination of food crops is the most remarkable feature of agriculture in Rewa district. The rural population of this district depends solely on agriculture for livelihood. The vagaries of monsoon have compelled the people to give preference to food crops over cash crops. They store the excess food grains for a possible drought year.

The nutritive value of the staple food of the people is far below the minimum requirements. The caloric intake is very low among the people of the district. The most important reason is the meagre output of the land. Other sources of supplying calories are also inadequate. The other factors responsible for the low caloric value of diet are vegetarianism, insufficient production of fruits, low yield of vegetables, groundnut and sugarcane. It is on account of poor food and mal-nutrition that a number of diseases flourish in the district. The author feels that this state of affairs resulting in mal-nutrition may be improved by the optimum use of land through all its sources.

A set pattern of crop combination may be selected on the basis of soil and climate etc. A particular crop belt

has already been suggested in the preceding chapter. Linseed may be developed as the cash crop of the district. The uncertainty of monsoon rains have made the cultivators fatalistic. To avoid this, crop insurance must be introduced.

The mixed farming, truck farming, poultry farming and fishing may be developed for which there is ample scope. The development of means of transport, especially road transport is necessary for the growth of these allied agricultural trades in the district, because of the perishable nature of these products. These products should be supplied to the district headquarters at Rewa and the excess quality may be kept in cold storages. These facilities will improve the caloric intake of the people of the district. The author has observed that the district at present depends solely on adjoining towns for its requirements of these essential commodities. Development of these facilities in a planned manner will not only ensure adequate supply of these important food items but will also prove profitable to the cultivators of the district.

The Government may open demonstration and training centres for the benefit of villagers. These centres will serve the purpose of supplying hybrid seeds, fertilizers, tractors and other implements to the farmers. These centres can also serve the purpose of research and development of agriculture in conformity with local conditions and needs.

New varieties of hybrid seeds and agricultural implements can be developed in these centres. The need for the establishment of such centres is emphasised so that particular attention may be paid to the micro-regions.

The availability of industrial raw material from forests and agriculture coupled with cheap labour augurs well for the industrial growth of this district. The author is convinced that silk industry, lac industry, wood craft-industry charcoal industry, Tile industry, building material industry, Fishing and Biri industry, can flourish in this district.

Rewa district is rich in natural resources and it abounds in scenic spots of great natural beauty. There is a great potential for the development of tourism in the district. The three water-falls, namely, Chachai, Keoti and Bahuti can be a big attraction for Indian and foreign tourists. The fall line can produce cheap hydro-electricity, which will not only meet the needs of this district but also that of adjoining areas. The beautiful lake side resort of Govindgarh, the home of world famous white tigers, can be developed as a major tourist spot. The Kaimur ranges with its thick forests and abundant wild fauna can be a very suitable site for a national park.

In the field of agriculture Rewa district will not lag behind any other area in green revolution, provided its multiple resources are properly tapped and the methods for optimum use of land are employed. The district has the potential of meeting its own needs as well as of providing support to other districts.

GLOSSARY OF LOCAL, STANDARD & BOTANICAL PLANT NAMES :NAMES

Local Name	Name of Hindi	Botanical names
Achar	Acbar	<i>Buchanania lanata</i> Spreng
Adhi	Pedar	<i>Stereospermum suaveolens</i>
Ainhi	Marorpha	<i>Helicteres isora</i>
Ail	Ail	<i>Mimosa hirsuta</i>
Akola	Akol	<i>Alangium salvifolium</i>
As	Asa	<i>Magnifera</i>
Amaltas	Amaltas	<i>Cassia fistula</i>
Amarbel	Amarbel	<i>Cuscuta reflexa</i>
Amila	Anta	<i>Bauhinia malabarica</i>
Anra	Aonla	<i>Emblica officinalis</i> (<i>Phyllanthus emblica</i>)
Anta	Anta	<i>Bauhinia malabarica</i>
Anjan	Anjan	<i>Hardwickia binata</i>
Anthil	Madhukamini	<i>Murraya paniculata</i>
Bagal	Sabal	<i>Eulaliopsis binata</i>
Bahera	Bahera	<i>Terminalia bellerica</i>
Baibhidang	Baibarang	<i>Embelia tejeriana</i>
Bans	Bans (Bamboo)	<i>Dendrocalamus strictus</i>
Banasa	Sabod Siris	<i>Albizia procera</i>
Barari	Makor	<i>Eizyphus cenoplia</i>
Baranga	Baranga	<i>Rydia Calycina</i>

Beril	Pakar	<i>Ficus litor</i>
Barasaj	Saja	<i>Terminalia tomentosa</i>
Bel	Bel	<i>Aegle marmelos correa</i>
Ber	Ber	<i>Zizyphus mauritiana</i>
Berri	Tondri	<i>Casearia tomentosa</i>
Bhanjuri	Ponai	<i>Apluda mutica</i>
Bhatkataliya	Dorli	<i>Solanum indicum</i>
Bhilwa	Bhilwa	<i>Semecarpus anacardium</i>
Bhirra	Bhirra	<i>Chloroxylon swistenia</i>
Bhond	Gunhar	<i>Themida quadrivalvis</i>
Bhothi	Khursi	<i>Grewia elastica</i>
Bhurkadi	Bhursai	<i>Hymenodictyon excelsum</i>
Bijabara	Bija	<i>Pterocarpus marsupium</i>
Bhakoda	Tarota	<i>Cassia tora</i>
Bhamarail	Bhamarail	<i>Accacia pseudo-aburnia</i>
Bhamar dhwai	Dhwai	<i>Woodfordia fruticosa</i>
Bhar	Achar	<i>Buchenania lanzan</i>
Bheola	Palas	<i>Butea frondosa</i>
Bhirr	Koya	<i>Daporata cylindrica</i>
Bhikna	Bhikna	<i>Chrysopogon fulvus</i>
Bhichira	Chirchira	<i>Achyranthes aspera</i>
Bhilla	Tondri	<i>Casearia tomentosa</i>
Bhirul	Chirul	<i>Holoptelea integrifolia</i>
Bhuchura	Bhurbhusi	<i>Eragrostis tenella</i>
Bhurkat	Lampa	<i>Heteropogon contortus</i>
Bhava	Spear Grass	<i>Anogeissus latifolia</i>

Dhawai	Dhawai	<i>Woodfordia fruticosa</i>
Dhimerbul	Dhimerbel	<i>Khocarpus frutescens</i>
Dhobin	Dhobin	<i>Dalbergia paniculata</i>
Doob	Doob	<i>Cynodon dactylon</i>
Dudhiya	Dudhi	<i>Holarrhena antidysenterica</i>
Ghont	Ghont	<i>Zizyphus xylocarpa</i>
Galar	Galar	<i>Ficus glomerata</i>
Galsakari	Galsakari	<i>Grewia hirsuta</i>
Hindua	Gadhapalas	<i>Erythrina suberosa</i>
Halduo	Haldu	<i>Mina cordifolia</i>
Harra	Harra	<i>Terminalia chebula</i>
Indrajim	Dudhi	<i>Holarrhena antidysenterica</i>
Janarasi	Janarasi	<i>Eisodendron glaucum</i>
Janati	Kathjamm	<i>Synygium hayneanum</i>
Jaman	Jaman	<i>Synygium cumini</i>
Jharberi	Jharberi	<i>Zizyphus nummularia</i>
Jinga	Moyen	<i>Lancea coromandelica</i>
Kachnar	Kachnar	<i>Bauhinia variegata</i>
Kahva	Kahva	<i>Terminalia arjuna</i>
Kajaha	Mundi	<i>Hitragyna parvifolia</i>
Kaitha	Kaith	<i>Feronia limonia</i>
Kaner	Kaner	<i>Merium indicum</i>
Kanji	Karenji	<i>Pongamia pinnata</i>
Kans	Kans	<i>Saccharum spontaneum</i>
Kapar	Pakar	<i>Ficus lacor</i>
Kardhai	Kardhai	<i>Nogalissus pendula</i>

Kari	Kari	<i>Milium tomentosum</i>
Karonda	Karonda	<i>Carissa opaca</i>
Kasai	Kasai	<i>Eridalia retusa</i>
Katai	Katai	<i>Pseccourtia indica</i>
Kathjawan	Kathjawan	<i>Synygium hayneanum</i>
Kemabala	Sebra	<i>Banhinia retusa</i>
Kekar	Kekad	<i>Garuga pinnata</i>
Ketibal	Kecti	<i>Ventilago calyculata</i>
Kumhar	Gumari	<i>Gmelina arborea</i>
Kurbar	Phatra	<i>Gardenia turgida</i>
Khair	Khair	<i>Acacia catechu</i>
Khanna	Lokhandi	<i>Ixora arborea</i>
Khiani	Khirmi	<i>Manilkara hexandra</i>
Khoja	Lokhandi	<i>Ixora arborea</i>
Khus	Khus	<i>Vetiveria zizanioides</i>
Koliar	Koliar	<i>Banhinia purpurea</i>
Konda	Kash	<i>Demostachya bipinnata</i>
Kosum	Kosum	<i>Scheuchera oleosa</i>
Kulu	Kalu	<i>Sterculia urens</i>
Kambar	Lasora	<i>Cordia dichotoma</i>
Kurpa	Lampa	<i>Heteropogon contortus</i>
Kutana	Lantana	<i>Lantana camara</i>
Kidar	Kpidar	<i>Calotropis procera</i>
Khanna	Kabha	<i>Madhuka indica</i>
Khalin	Sebra	<i>Banhinia retusa</i>
Khalain	Kahul	<i>Banhinia vahlii</i>

Mainschar	Mainphal	Randia ametica
Makor	Makor	Zizyphus oenoplia
Manari	Manarasi	Eleocharis glauca
Madhaki	Mirguri	Vitex nigunda
Moyan	Moyan	Lannea coromandelica
Mussail	Mussail	Ichalium lasan
Neem	Neem	Asadirachta indica
Palas	Palas	Butea monosperma
Palas bel	Palas bel	Butea superba
Papai	Papra	Gardenia latifolia
Pariva	Lampa	Heteropogon contortus
Par siddh	Anjan	Haradickia binata
Patiman	Bistenda	Diospyros montana
Peepal	Pipal	Ficus religiosa
Patti	Ganj	Abrus precatorius
Retubala	Rusa	Cymbopogon martini
Reunsa	Reunjha	Acacia leucophloea
Rohin	Rohan	Soyimida febrifuga
Rori	Sinduri	Mallotus philippensis
Sagon	Sagvan	Tectona grandis
Saina	Sheda	Schinus molle
Saja	Saja	Terminalia tomentosa
Sal	Sal	Shorea robusta
Salai	Salai	Borwellia serrata
Sandan	Tinsa	Onoclea sensibilis
Sarai	Sal	Shorea robusta
Satwar	Shataori	Asparagus racemosus

tha	Lendia	Lagerstromia parviflora
aru	Harsinger	Nyctanthes arborescens
dia	Thar	Euphorbia tirucalli
	Lendia	Lagerstromia parviflora
al	Bamal	Salmalia malabarica
ham	Shisham	Dalbergia latifolia
ponka	Darali	Tephrosia purpurea
la	Siris	Albizia procera
du	Tenda	Diospyros malanocylon
gudi	Tingudi	Dicranthium sp.
	Tinsa	Cucumis cochinensis
he	Saja	Terminalia tomentosa
ar	Thar	Ficus racemosa