Prout in a Nutshell
Part 20

Shrii Prabhat Ranjan Sarkar

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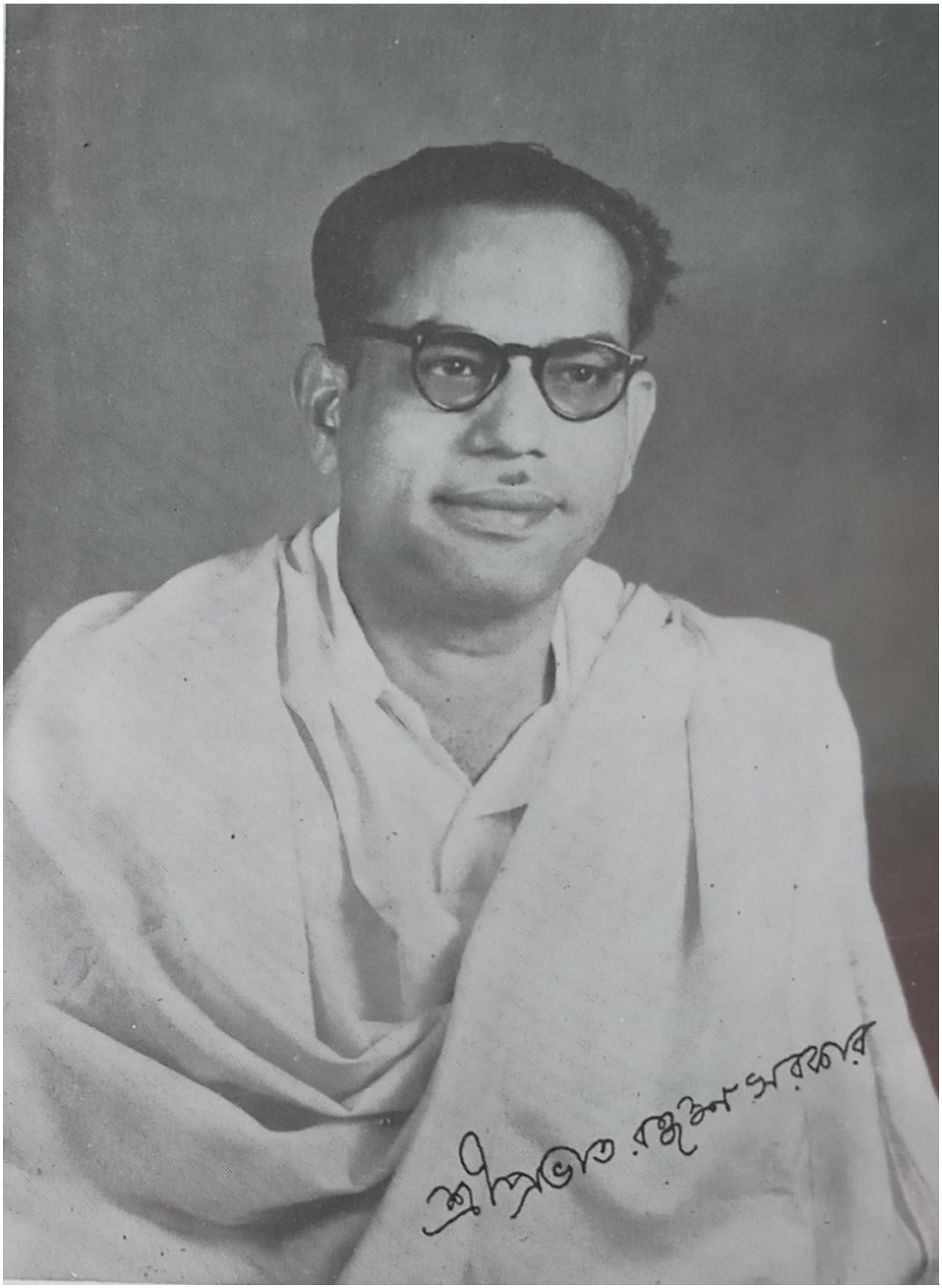

Shrii Prabhat Ranjan Sarkar

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ROMAN SAḾSKRTA ALPHABET

Realizing the necessity of writing swiftly and of pronouncing the words of different languages correctly, the undernoted Roman Samskrta (Sanskrit) alphabet has been adopted.

Those not familiar with either the Devanagari alphabet or the Bengali alphabet, and those not familiar with Bengali pronunciation, please see the pronunciation keys starting on page x.

অ	আ	ই	ঈ	উ	ঊ	ঋ	ঌ	ঌ	ৡ	এ	ঐ	ও	ঔ	অং	অঃ
অ	আ	ই	ঈ	উ	ঊ	ঋ	ৠ	ঌ	ৡ	এ	ঐ	ও	ঔ	অং	অঃ
a	á	i	ii	u	ú	r	rr	lr	lrr	e	ae	o	ao	aḿ	ah

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ক	খ	গ	ঘ	ঙ	চ	ছ	জ	ঝ	ঞ
ক	খ	গ	ঘ	ঙ	চ	ছ	জ	ঝ	ঞ
ka	kha	ga	gha	uṇa	ca	cha	ja	jha	iṇa

ট	ঠ	ড	ঢ	ণ	ত	থ	দ	ধ	ন
ট	ঠ	ড	ঢ	ণ	ত	থ	দ	ধ	ন
ta	tha	da	dha	ṇa	ta	tha	da	dha	na

প	ফ	ৰ	ভ	ম
প	ফ	ব	ভ	ম
Pa	pha	ba	bha	ma

য	র	ল	ব
য	র	ল	ব
ya	ra	la	va

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শ ষ স হ ক্ষ

শ ষ স হ ক্ষ

sha śa sa ha kśa

অঁ জ্ঞ ঋষি ছায়া জ্ঞান সংস্কৃত ততোঽহং

অঁ ज्ञ ऋषि छाया ज्ञान संस्कृत ततोऽहं

aṇ jiṇa rśi cháyá jiṇána saṁskrta tato’haṁ

a á b c d ḋ e g h i j k l m ṁ
n ń ṇ o p r s ś t ṫ u ú v y

It is possible to pronounce the Samskrta, or Sanskrit, language with the help of only twenty-nine letters of Roman script. The letters " f “, " q

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“, " qh “, " z “, etc., are required in the Arabic, Persian, and various other languages, but not in Samskrta.

" ́da " and " ́dha “, occurring in the middle of a word or at the end of a word, are pronounced " ŕ” and “ŕha ", respectively. Like " ya", they are not independent letters. When the need arises in writing non - Saḿskrta words, "ŕ” and “ŕha" may be written.

Ten additional letters in Roman Saḿskrta, for writing non-Sanskrit words:

क़	ख़	ज़	ड़	ढ़	फ़	य़	ऩ	ৎ	अँ
क़्	ख़	ज़	ड़	ढ़	फ़	य़	ऩ	त्	अँ
qua	qhua	za	ŕ	ŕha	fa	ya	lra	t	aṉ

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Publisher's Note:

Prout, an acronym for "Progressive Utilization Theory", is a comprehensive socio-economic philosophy developed by the author from the beginning of 1955 until his passing away in October 1990. The author defined Progressive Utilization Theory as the "progressive utilization of all factors", and those who support this principle as "Proutists".

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Translated from original Bengali. Meaning of Bengali words are given in footnotes.

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Economic Self-Sufficiency for Bengal

The poorest districts of Bengal are Bankura and Purulia – the economic condition of these districts is the worst in the state. Here the

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people are so poor that they live on grass seeds for three or four months of the year. Other districts such as Nadia, Murshidabad, Jalpaiguri, Coochbehar and Karimganj are better off economically.

To make all of Bangalistan economically self-sufficient, two things are important – self-sufficiency in the production of the minimum requirements of life, and the large-scale production of cash crops and non-agricultural products. Both are of paramount importance if the people of Bangalistan are to prosper. Minimum requirements include the provision of adequate food, clothing, housing, education and medical treatment. To guarantee these minimum requirements, there must be self-sufficiency in the production of staple food items, cloth, housing materials, educational equipment and medicines. In addition, cash crops and non-agricultural products must be produced

profitably. Let us discuss each item to examine how the people of Bangalistan can become economically self-sufficient.

FOOD PRODUCTION

The main obstacles to self-sufficiency in food production in Bangalistan are the scarcity of rain in the winter and the problem of drainage in the rainy season. Bengal often receives a lot of rainfall during the monsoon, but that is only for six to eight weeks of the year. Due to large-scale deforestation, the amount of rainfall has substantially decreased. In comparison to the needs of Bengal, there is now a shortage of rainfall that hampers the production of crops. The rivers do not have plenty of water, and the irrigation system does not function well. For want of rain in the winter, the winter and summer crops suffer terribly. Due to the

defective drainage system, the river water is not utilized for the production of food crops.

To combat these kinds of adversities, the irrigation system must be thoroughly overhauled. Where there is a continuous scarcity of rainfall in Bengal, particularly in the Rárh area, there should be maximum emphasis on shift and lift irrigation, tank irrigation and small-scale river-valley projects. Simultaneously, the rivulets and canals should be properly utilized and the drainage problem should be completely controlled. If the irrigation problem is solved properly, abundant crops can be harvested four times a year. For example, the aman, boro and áus varieties of paddy can be grown in rotation throughout the year. In ninety days one rice crop can be grown.

In Japan there is enormous population pressure. In British India, Tripura, Noakhali,

Comilla, Chandpur and Brahmanberia were overpopulated. The population density in Japan today is much greater than in those areas at that time, nevertheless Japan has been able to attain self-sufficiency in food production.

The sticky soil of Rárh can hold water for a long time, and such soil is ideal for constructing tanks, ponds, reservoirs and dams. Naturally pisciculture can be developed because water can be conserved in the soil. Moreover, sticky soil is ideal for aman paddy. In some places in North Bengal there is sticky soil, while in other places there is sticky sandy (doánsh) soil, which is approximately one-third sticky and two-thirds sandy, as in Dinajpur district. Of all the districts in North Bengal, Dinajpur is the most ideal for the production of aman paddy. The soil of Bangladesh is generally sandy and is ideal for áus production. Sticky sandy soil is suitable for áus and jute.

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The climate in Tripura is very similar to that of Rárh, and although Tripura is a rain-shadow area, the amount of rainfall in Tripura is greater than in Rárh. The soil of Tripura is ideal for áus paddy, summer crops and potato. Jute may be grown, but there will not be an abundant harvest. Chilli can be grown in abundance and will have a large market in Bangladesh. Rárh can grow an abundance of mustard seeds, whereas the other regions of Bengal can grow sesame seeds, from which many oil products can be easily made. Sesame is an ideal cash crop. There should be greater emphasis on the production of sugar beet than sugar cane, because the cultivation of sugar cane occupies farm land for a full year. Sugar beet can be grown profitably in the Ayodhya Hills in Purulia district and the Shushunia Hills in Bankura district. Sugar can be easily processed from sugar beet and sweet potato (shákálu). North Bengal is ideal for the

cultivation of tobacco, which needs black soil. Rárh has ideal soil for the cultivation of pulses and potato. Usually a damp climate is not congenial for potato cultivation, which is why North Bengal and Assam get their supplies of potato from Birbhum district. Hooghly district supplies potato to Calcutta, Burdwan district does the same for Bihar, and Midnapore does the same for Madhya Pradesh. In the eastern portion of Rárh, potatoes grow quite well.

Although Tripura is a rain-shadow area, its hills receive substantial rainfall because there is less movement of water vapour in Tripura than in the rest of Bengal. The Cherapunji area of Assam receives the most rainfall in the world, but the adjacent rain-shadow area of Shillong receives much less rain. Water vapour condenses into rain on the Cherapunji Hills, consequently little moisture is left for Shillong, which is why the average amount of rainfall in

the Cherapunji Hills is 900 inches a year, but the amount of average rainfall in Shillong is only 80 inches a year.

One of the main differences between Tripura and Rárh is that Tripura receives much more rain. The weight of one potato is nearly half a kilogram in Rárh, but in Tripura it is much less; however, Tripura can grow many more potatoes than Rárh. In fact, Tripura can grow so many potatoes that it can supply Bangladesh and earn a lot of foreign exchange. Tripura can also grow a lot of mustard seeds which can be exported to Bangladesh. The sticky sandy soil of Bangladesh is not suitable for growing mustard seeds. In Tripura the soil is heavier than in Rárh, so Tripura can grow pineapples and bananas. Jackfruit does not require any special soil and it can be grown throughout Bengal. Tea can be grown in Tripura but not very well because it requires sloping hilly land, where water does

not accumulate, and heavy rainfall. The amount of the tea harvest generally depends on the amount of rainfall.

Silchar, Karimgarj and Tripura can grow rubber, but the harvest will not be abundant. Jute requires heavy rainfall plus fertile soil, so it will grow better in Maymansingh district than in Tripura. Maymansingh district is called the "Dead Valley of Brahmaputra". A lot of wild arum can also be grown in Tripura.

For the cultivation of vegetables there must be a constant supply of water, but not necessarily rainwater. Nadia and Kusthia districts can easily grow abundant vegetables. In these areas cabbages, cotton (chás kápás and gách kápás) can also be grown abundantly. Nadia and Murshidabad can grow much wheat. Cotton can also be grown profitably in Tripura.

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Rubber cultivation can be undertaken in that part of Tripura which has much rainfall.

Coconuts require saline water, hence in the coastal areas of South Bengal many coconuts can be grown. For example, in the entire coastal area of South Bengal – 24 Parganas, Noakhali, Chittagong, Coxbazaar and other places – coconuts can be grown in abundance. This coastal area is called “Marine Bengal” and is the coconut belt. It can also be utilized for the shipbuilding industry. The Sanskrit equivalent of “coconut” is kalpataru brkśa. In Siliguri, Coochbehar, Cachar and Karimganj the soil is ideal for the cultivation of betel nut. In the same soil black pepper can also be profitably grown. The cultivation of betel leaf requires saline soil. The soil of the Tamluk subdivision of Midnapore is ideal for betel leaf, and it can supply the entire Indian market. All of South Bengal can grow betel leaf.

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Except for jute, all these crops come within the scope of food items. From jute many other subsidiary industries can be developed, such as paper, rayon and silk. Paper can be produced from bamboo also, but it will be a little more expensive. The economic planning of all Bengal must be done block-wise. The soil and climate of Rajganj in South Bengal are not the same as those of Malda and Raiganj in North Bengal, hence the planning in the two areas must be different. Although the economic planning of Bengal must be on a large scale, there must still be block-level planning.

Paddy

Of all the varieties of grass in the world, bamboo is the tallest. The shortest is durvá grass. Durvá is a Sanskrit word. Durvá grass is quite short and grows in abundance in the

Chotanagpur area. Grass of all varieties has medicinal value. There are over 250 varieties of bamboo. Besides this, sugar cane, paddy, vicali and wheat come within the category of grass. People sometimes eat the seeds of certain varieties of grass, but not of all varieties. Although sugar cane produces flowers, we rarely see its seeds. Sugar cane sprouts out of the joints of the plant. Bamboo flowers are not suitable for human consumption. Vicali grass produces tiny seeds, and during times of famine sometimes people survive on vicali grass seeds. Madur grass also produces seeds, but they cannot be eaten by human beings.

Paddy, commonly called rice, is the staple food for many people in the world. There are different varieties of paddy. The plants of some varieties are seven to eight feet tall, whereas other varieties are two and a half to three feet tall. Barley is also a kind of grass. Wheat is

smaller than barley. Maize or corn and millet (bájrá) are other varieties of grass, but their leaves are more flat. The speciality of corn is not in the tip of the stem like paddy, but in the joints of the stem where the ears grow. Rice, wheat and barley are staple foods. Some local varieties of grass found in Bengal such as shyámá, nárkátiá, kaun and kodo are regarded as food. During periods of extreme food shortages, the seeds of these grasses are eaten.

The Sanskrit word dhánya means “green vegetation”. [In Bengali it means “paddy”.] When the Aryans came to India they saw green vegetation for the first time. But there is a difference between the paddy of Bengal and the green vegetation in Sanskrit vocabulary. Paddy was first seen by the Aryans when they reached Persia, although very little paddy was grown there. The Aryans called paddy briihi, that is, “the crop which has vast potential as a food”.

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Paddy is easily digestible and it also has medicinal value. The English word “rice” came from the Sanskrit word briihi. After 1,000 years briihi became rihi in Persian, which became risi in Old Latin after another 1,000 years, and then “rice” in modern English.

Boiled rice, fried rice, puffed rice and beaten rice are made from rice. Wheat increases physical strength, but as it is a bit acidic, it reduces vital energy after the age of fifty-five. According to some people, wheat bread brings strength to the body but dulls the brain, but rice is free from this defect. Rice takes up much room in the stomach, which is why people feel lethargic and sleepy after a meal of rice. When the Aryans entered India, they noticed that the land grew lush green vegetation, so they called it Harit Dhánya. This word became Hariyahánna after 1,000 years, then Harihána after another

1,000 years, and now it is “Harayana” – the land of abundant green vegetation.

Paddy had already been used for a long time by the Dravidians and Austrics before the Aryans first saw it. Paddy was the main crop of Rárh. By sowing the paddy seeds in a small plot of land, farmers first prepare the seedlings. In Sanskrit seedlings are called ásphota, and a pit for the seedlings is called biijatalá. If Sanskrit had not been the indigenous language of India, how could the illiterate villagers of Rárh have known Sanskrit words before the Aryans entered India? Hence, it is clear that Sanskrit was the original language of Rárh, Greater Bengal and India. In Dhanbad, Deoghar, Dumka, Pakur, Godda, Birbhum and other places in Rárh, words which originated from Sanskrit are used extensively.

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When human beings first started to eat a vegetarian diet, they collected fruits, roots and vegetables from trees and plants. Sometimes they also ate grass seeds. Among the grasses, they discovered that the rice seeds did not taste bad, and gradually they became habituated to eating rice regularly. In the Stone and Bronze Ages, people used to collect paddy seeds and remove the husks with stone implements. This process ultimately led to the invention of improvised husking machines. After the discovery of fire, human beings also began to boil rice. They also discovered that rice can be dried in the sun and eaten instead of boiling it. However, rice prepared in this way tends to cause constipation, so people preferred boiled rice. The people of Bihar and Uttar Pradesh are accustomed to sun-dried rice. If sun-dried rice is eaten after midday, then there is less possibility of getting constipation. People began to fry boiled rice on primitive earth pans, and learnt

that fried rice prepared in this way was a bit hard. Consequently, they boiled rice twice, and from this muri or puffed rice was prepared. Moreover, rice was fried on earth pans to prepare khai or wholegrain puffed rice. The nutritional value of puffed rice is negligible, but it can be used as a breakfast cereal. Thus, people began to prepare different kinds of food from paddy, and this is the reason that the intelligent Aryans called rice briihi.

In the primitive stage of agriculture, people used to merely scratch the surface of the soil with a stick or stone implement and scatter the seeds onto the land. When the rain came, the seeds would sprout, and in due course, grains and tuber crops would be produced. The people would harvest these crops, then burn the stalks, which would serve as manure. Gradually the fertility of the soil diminished, so they began to wonder how to increase the fertility of the soil.

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Some intelligent people conceived of making deep holes in the soil and extending the area of arable land. In the process, people invented the method of farming the land with ploughs and bullocks. They also discovered that cow dung was an ideal manure. With the help of ploughs, the soil could be tilled deeper and made more fertile. In olden days, people would sometimes let the land lie fallow for one to two years to increase its fertility. This system is practised even today in some places. Subsequently, people also discovered that if two seeds are sown in the same place, the plants will not grow properly, so they developed the system of planting seedlings so that each seed had its specific place – thus they developed the system of transplantation. This is called ropana in Sanskrit, while sowing seeds is called vapana. As a result of transplantation, paddy grows healthy and produces large amounts of flowers, the overall growth of the plants reaches the maximum size,

and many offshoots grow out of the roots. Through these kinds of discoveries, farmers were able to increase the productivity of the land and get a better harvest from each plant. In Bangladesh it is difficult to transplant seedlings because if the seedlings are prepared in seed beds, they may be drowned due to the extensive rainfall. Consequently, paddy seeds are sown long before the rainy season so that by the time the rain starts, the seedlings will have grown to a suitable height. The rule for growing paddy is, if the tips are submerged in water due to sudden rainfall, the paddy will decompose and the plants will die, but if the water level is increased gradually, the seedling will keep growing to stay just above the water.

Varieties of paddy can be grown in all seasons. Áus is harvested in Bhádra, but in the rainy season, early autumn and late autumn, aman grows. From the last part of winter to the

summer season, boro can be grown. Hence, different varieties of rice can be grown throughout the year.

Áus is grown in comparatively dry soil which receives little rain. It prefers sticky sandy soil. If water accumulates in the soil around the roots of the áus crop, the plants will wither. In Murshidabad, Jessore, Khulna, Nadia and North 24 Parganas there is plenty of sticky sandy soil. Áus can grow abundantly in these districts. The districts of North Bengal are also fit for áus cultivation.

Sun-dried áus does not cause constipation, but as it is coarse, people do not normally like it, which is why the rich people of Rárh used to donate the áus crop to the poor people. Good quality bread can be made from áus paddy, hence the bakery industry can be developed in every block and locality. People of average

means can eat bread made from áus flour for breakfast, lunch and dinner. Such bread can be eaten frequently because it is not made of wheat, so regular consumption will not cause acidity. Among the rice eaters, the number of intelligent people is high. Rice eaters can also eat áus bread.

The production of áus will be abundant if it is grown in Vaeshákha and harvested in Bhádra. Áus can also be grown in Jyaeśtha and Áśárha. In North India áus is called bhádoi. In olden days people would cultivate áus because the early autumn was the lean season and the aman crop was still in the field, so if the áus could be harvested in the early autumn, they would get some money to pay revenue taxes. In the past during the festival to worship the snake god, villagers used to cook áus and prepare a dish made from arum. There is little risk involved in the cultivation of áus because the seeds will almost always grow if they are sown in moist

soil. Only one or two showers are enough for the plants to grow and flower. In those areas of Rárh where there is chronic drought, áus can be grown profitably. Like other varieties of rice, áus has little fat.

From áus bran, bran oil can be made. The cement industry can be developed by using áus bran and áus husks mixed with limestone and marine soil. In western Rárh and the coastal region the cement industry can flourish. Cement made from aman husks is better in quality than that prepared from áus husks.

With áus, a “pigeon crop”(1) of [[barley]] is not very productive nor should pisciculture be developed, because in the áus paddy field there is little water. In some parts of Bengal the seeds of áus are sown in the field and not transplanted, because muddy soil is necessary for transplanted áus. In Bangladesh there is so much

water that it is difficult to make mud, so áus seeds are sown directly in the field before the rainy season. As I said earlier Murshidabad and Nadia districts have rich sticky sandy soil which is ideal for abundant áus. These areas can attain self-sufficiency in food production if áus is cultivated properly. With a little care the production can be increased from one hundred and fifty to two hundred percent.

Áus straw cannot be used for thatching houses but it can be used as a cattle fodder. When straw decomposes it produces a special kind of mushroom called kavaka in Sanskrit. Though it contains some food value, it is a static food, and as such is forbidden for Ánanda Márgiis. Good quality paper and fibres may be prepared from áus straw.

Aman can be grown both by sowing the seeds and by transplanting the seedlings. As the

people of Bangladesh are less industrious than the people of West Bengal, they now cultivate aman by sowing the seeds in the field, but if they will transplant the seedlings, production will increase. It should be noted that the inhabitants of Bangladesh have less physical endurance than the people of West Bengal due to climatic factors. For the cultivation of aman the soil should be ploughed four times. The land should be ploughed first in the summer when the soil is dry, again before the rainy season, then after the rainy season, and finally when transplanting is being done. In Bangladesh people usually plough the land just once, then sow the seeds.

The process of cultivating transplanted aman is as follows. First the seeds are sown in the seed beds and allowed to grow for four to six weeks before the seedlings are transplanted. The seedlings should be planted in a triangular formation in two parallel lines, and there should

be some water in the field. An aman field should be inundated with water before the time of flowering, and preferably there should be rainfall to nourish the flowers. Without rain the plants will not flower properly. If the plants flower in Áshvina, after two months the paddy can be harvested. The kálá kantik variety of paddy is harvested in Kárttika and then the summer crops can be planted. A “pigeon crop” of the rai variety of mustard, small black peas (ćhikre maćar), small black Bengal gram (ćhikre cháná) or black lentils (ćhikre masur) can be grown as an associate crop.

Where kálá kantik paddy has been harvested green gram (big variety), peas (big variety) and potato can be grown. These days, people prefer the hybrid variety of paddy. After paddy is harvested in October the summer crop can be grown in the same land. The best time to grow wheat is in Kárttika, and if it is grown at this

time the harvest will be plentiful, but if wheat is grown in Agraháyańa it will be the late variety and the harvest will be smaller. If hybrid aman is cultivated in Nadia and Murshidabad, it can be harvested before the early variety of wheat is grown, but as the soil is sticky and sandy, the water does not accumulate, hence it is not ideal for the aman crop.

The soil of Ráŕh is sticky, so it retains water; hence there are more ponds and tanks in Ráŕh than in other parts of Bengal. In Burdwan district there are over 25,000 ponds and in Purulia district over 10,000 ponds, so the soil of Ráŕh is very congenial for the cultivation of aman paddy. When it is time for the aman paddy to flower, seedlings of áus should be grown in comparatively high land. As soon as aman is harvested the vacant field should be ploughed and the áus seedlings transplanted. This crop will be winter áus. By the time winter áus is

harvested, boro seedlings should be separately planted in the same land. As aman occupies the land for four months, up to six weeks can be taken to prepare the seedlings, so then the paddy will grow in the field for only two and a half months.

Boro requires three times more water than wheat, hence it is more profitable to grow wheat in Nadia and Murshidabad districts than boro. Where deep tube wells are available, boro can also be grown.

In the boro fields pisciculture may also be developed. As there is plenty of water in aman and boro paddy land, people can profitably grow the nayata, khyara, kunti and kharshota varieties of fry, which lay their eggs in ponds. The people of Rárh do not relish dried fish, but dried fish can be prepared in Rárh and exported to other

regions. They should cultivate fry but not big fish such as bata, pabda and carp.

The soil of Rárh can produce bumper harvests if it is properly irrigated. Burdwan, Hooghly and Howrah districts produce abundant boro.

The straw of the aman paddy can be used for thatching houses, as a cattle fodder, and in the paper industry. The straw of boro paddy is not very healthy, and even cows refuse to eat it, nor can it be used for thatching, but it can be used for producing good quality paper and fibres. It can also be used to grow mushrooms. When boro straw decomposes it produces high quality mushrooms.

In northern India áus is called “autumn paddy”, aman is “winter paddy” and boro is “summer paddy”. The outer skin of the aman

paddy can be used to produce cement of the best quality. In Nadia district three to four cement industries can profitably run from the winter paddy crop. In the adjacent district of 24 Parganas, lime made from the shells of small snails and shell fish can be manufactured and supplied to Nadia district. So in 24 Parganas the lime industry can be developed to supply Nadia district, thus two districts can develop their industrial potentiality.

Before the partition of Bengal, boro was widely cultivated in Bangladesh, particularly in the Kishanganj subdivision of Maymansingh district and the Habiganj subdivision of Sylhet district. These days even Ráŕh is growing a lot of boro.

Pulses do not require much water, but wheat needs to be irrigated three times during its growing cycle. Boro needs three times more

water than wheat. Hence in sandy and sticky sandy soil, one should not cultivate boro, because water does not accumulate at the root of the plant. But boro is profitable, which is why if farmers get the scope to cultivate it they do not grow wheat. Wheat requires cold weather as it matures, but it is adversely affected by extreme cold. In foggy weather potato is also infected with diseases. Let the farmers grow boro on most of their land, wheat in smaller areas, and áus in the barren, dry land.

Aman bran can be utilized to manufacture bran oil, while the straw can be used in the paper industry. As a general rule it is always more profitable to establish an industry in the local area where there is a ready supply of raw materials than to transport the raw materials to some distant place. While cultivating áus in Rárh, the farmers should pay more attention to transplanted áus than to sown áus because

transplanted áus is more productive. Flour can be made from the outer skins of aman and used to manufacture good quality bread which will have a large market. Madras has already established factories to produce biscuits from aman flour. Bengal can do the same.

China produces more rice than any other country in the world, followed by Burma, India and then Thailand. Since China and India have to feed huge populations, they cannot export rice to other countries, whereas Burma and Thailand can export rice because their populations are much smaller. The Philippines, Taiwan and Japan are self-sufficient in rice production. In Bengal most rice is produced in Burdwan, Birbhum and West Dinajpur, followed by Midnapore, Bankura and Coochbehar. Jalpaiguri, Darjeeling, Murshidabad and Nadia are deficit districts.

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The soil of North Bengal, Bangladesh and Assam is very good for growing sesame. Sesame is of three varieties – the red variety, which grows in winter; the white variety, which grows in summer; and the black variety, which grows in the rainy season. Sesame does not grow well in a damp climate. The skin of sesame can be used as a good quality manure. It can also be used to make oil cake, which is both a good cattle fodder and also a manure. Sesame can also be used as flour to produce bread, pudding and porridge. It is easy to remove the skin of sesame. Simply soak the seeds in water overnight, put them in hessian cloth and rub them. The skin will automatically drop off. Skinless sesame is used for preparing some delicacies like til sandesh, the famous sweet of Burdwan, and tilkut, the most delicious sweet of Gaya district of Bihar.

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Sesame is a three month crop. The land should be ploughed three times and irrigated twice. Black sesame is the best variety. Its oil is a good medicine for those who get angry easily. White and red sesame can be used to make edible oil. Sesame oil can be utilized as a scented oil, because it has a tremendous capacity to absorb different fragrances. Coconut oil has the least capacity to absorb fragrances, but it is the best hair oil. White sesame looks good. Some of the delicacies produced in Lucknow are prepared with white sesame.

Because much of the land in North Bengal and Bangladesh remains under water or contains much flowing water in certain periods of the year, it is difficult to develop pisciculture, so the dried fish industry cannot be developed. In West Bengal there are many canals, which is why much fish is produced there which can be easily exported to Burma, Thailand and Japan.

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Land which cannot be ploughed and is not suitable for paddy can be utilized for “pigeon crops”. On the boundaries of the aman paddy land, Bengal gram can be grown in abundance. On the same land paddy, fry and gram can be cultivated, hence people can produce rice, fish and pulse simultaneously.

Liquid manure should be added to the paddy field after the weeds have been pulled out, otherwise the weeds will absorb the manure from the soil. Similarly, before sowing “pigeon crops” manure should be added to the soil, otherwise the “pigeon crops” will absorb the nutrients that are intended to fertilize the paddy. The “pigeon crops” should be sown after the paddy flowers. If they are sown earlier, the small fish in the paddy fields will not be able to move freely, restricting both their growth and the growth of the paddy.

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Cashew nut processing plants may be established in Midnapore, particularly in the Ramnagar, Sutahata and Nandigram blocks. Cashew nut flowers should not be separated from the fruit. Floral nectar can be gathered from the flowers, which can also be utilized for the preparation of alcohol through fermentation for the pharmaceutical industry.

Seaweed can be gathered from the coastal areas of Bengal to manufacture iodine. The tobacco processing industry can be developed in Coochbehar and Bankura. Silk spinning mills can be established at Malda, Sujagang, the Jangipur and Lalbag subdivisions of Murshidabad, Vasoa Vishnupur in Birbhum district and the Visnupur subdivision of Bankura district.

Wheat

Wheat is the second most popular staple food in the world after rice. When the Aryans were living in Central Asia, they were only acquainted with barley. They first came in contact with wheat after coming to Persia. Barley has food value but it does not taste as good as wheat. Barley is prepared by removing the skin of the grain. If the skin is not removed and the wholegrain is fried and ground, fried wholegrain flour will result.

In olden times wheat was ground by using hand grinding machines because there were no mills. When the Aryans came to Persia they discovered wheat and liked its good taste, so they began to search for a suitable name for this new grain. The delicious taste of a food is experienced by the tongue. The Sanskrit synonym for “tongue” is go, and that which brings good taste to the tongue is called godhúma in Sanskrit. Dhúma means merriment,

festivity or delight. The Sanskrit word godhúma was later transformed into gohuma, then into gaham. In Bihar and Uttar Pradesh, it is called gehuma. In Ráŕh and Orissa, it is called gaham; in Bengal gam. In the Punjab, it is called kanaka. Mature wheat is golden in colour, hence it is called komaka, which means "golden colour". In Tamil it is called godhumái; in English, "wheat". The abstract nouns of the adjective "white" are "whiteness" and "wheat". In certain places godhúma looks white, so it was called "wheat" in Old English.

After the Aryans came to India they noticed an abundant growth of wheat in the western regions. In southern India wheat was totally unknown. Usually wheat requires fertile soil, plain land, little water and a cool breeze. Of course these days there is some cultivation of wheat in South India. Wheat is a summer crop. It does not require much water – it is enough if the

soil is moist – but it needs a cool breeze. The best time for cultivating summer crops is when the sun begins to move towards the north for people in the southern hemisphere, and when the sun begins to move towards the south for people in the northern hemisphere. In India, by the time the sun moves south of the equator, the harvesting of wheat should have been completed.

Wheat is a three-month crop. During the cultivation of wheat, the land should be irrigated three times for the best harvest – once before planting, once while the crop is growing, and once while the crop is flowering. Wheat needs fertile land, but the soil must be sticky and sandy. If water accumulates at the root of the plant, it will wither and die. In those areas of Rárh where sticky sandy soil is available, wheat grows well. The best places for cultivating wheat in Bengal are Malda district, the Lalgola and

Baharampur subdivisions of Murshidabad district, Nadia district, North 24 Parganas, and the northern part of Jessore and Khulna districts in Bangladesh.

The soil and climate of Bangladesh is not suitable for growing wheat. Even if the plants grow, the seeds will be susceptible to fungus because of the damp climate. But in Kusthia district, wheat may be grown. This district was formerly part of Nadia district. In Faridpur and Dhaka districts, wheat will not grow because the climate is damp. For the same reason wheat cannot be grown properly in Assam and certain parts of North Bengal. If wheat is grown in these places seeds will not be produced, and even if the seeds are formed, they will be susceptible to fungus.

In Bihar ideal wheat production is not possible in Magadh, but Mithila can produce

bumper crops. Uttar Pradesh and Harayana will have good harvests, but the best state in which to grow wheat in India is the Punjab. Of all the districts of the Punjab, Ludhiana has the most outstanding harvests.

In Bengal, Memari-1 block of Burdwan can produce the most wheat. Galsi-2 block is ideal for yellow mustard, and the Jamalpur area of Burdwan and Farukhabad of Uttar Pradesh can produce the most potato.

Wheat can be used to make flour and porridge. Wholegrain wheat flour or coarse flour is good for the stomach, but flour produced by removing the skin of wheat is not. Of all the districts in Bengal, wheat grows well in the inland wavy land and the land adjacent to rivers in Malda district, the Lalbag and Berhampore subdivisions of Murshidabad district, the entire Nadia district, the entire 24 Parganas district,

and eastern and western Rárh. Bankura district supplies the best wheat seeds in Bengal. After harvesting high-breed aman, that is, aman paddy which comes from a bumper crop, the empty land should be ploughed twice at right angles, then the land will not require leveling. At the time of the second ploughing, the seeds should be sown. When they sprout, the first irrigation should be done.

The best time for sowing wheat is when Libra remains at ninety degrees with Scorpio and Sagittarius, which is in the Bengali months of Kárttika, Agraháyańa and Paośa. The early variety of wheat must be sown between the first of Kárttika and the middle of Agraháyańa, and the late variety can be sown up to the seventh of Paośa. If adequate irrigation can be arranged in Rárh, wheat can easily be grown there.

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Small-scale irrigation projects should be undertaken for rivers such as the Mayuraksi, Kopai, Ajay, Bakreswar, Dwaraka, Barakar, Kansai, Kumari, Dulung, Keleghai, Chhotkiguwai, Barhkiguwai and Suvarnareka in Rárh. In these small irrigation projects, the authorities should not construct large dams, rather they should confine their expenditure to two and a half million rupees to five million rupees. As far as the standard of soil for wheat production is concerned, Samatat or Bagŕi is the best, then East Rárh, then North Bengal. Due to the damp climate of North Bengal, wheat seeds are easily susceptible to fungus. Wheat production per acre in Jalpaiguri is half the quantity produced in Nadia district.

Nitrogen, which increases the fertility of soil, is produced at the root of all the pulse crops. In wheat fields pulses should be grown as associate crops as this will automatically increase the

production of wheat. According to the seasonal schedule of wheat planting, the relevant pulse should be planted as a blended crop. That is, early wheat should be grown with early pulses and late wheat with late pulses. The rái variety of mustard is also nitrogenous. If ninety percent of a field is cultivated with wheat and ten percent with pulses, farmers will get the equivalent of one hundred percent wheat production as well as the ten percent production of pulse, thus increasing the overall productivity. This is due to the effect of the nitrogen. Hence, the pulse crops will provide extra profit for the farmers.

The disadvantage with wheat is that when the wheat grain is growing but not yet fully matured and the easterly wind blows, the wheat will not ripen properly, and fungus will affect the seeds. If instead, however, the westerly wind blows, it will be extremely beneficial for the

crop. As wheat depends on a cool breeze, with the increase in the coolness of the climate the productivity of the crop increases, but with the decrease in the coolness it decreases. If, however, there is snow or heavy frosts, the wheat crop will be destroyed. In wheat cultivation manure is also important. The nutritional value of wheat is slightly more than that of sun-dried rice.

In Bengal Samatat has the maximum potential to produce wheat, but it does not have an adequate river irrigation system. But by God's blessing the water level in this area is not very low, so the farmers can cultivate wheat with the help of shallow tube wells. There is an extensive market for wheat throughout the world.

Those areas of Rárh where the soil is yellow are not suitable for the cultivation of mustard seeds. Wheat requires fertile soil but soil which

contains lots of pebbles and stones. Where the climate is very cold, barley rather than wheat can be produced. In the soil of Bangladesh sesame grows quite well. The areas where the climate is a bit warm are good for wheat, but barley is not usually grown.

Countries which have much cold cannot grow wheat, but can grow oats well. The nutritional value of oats is less than that of wheat, but not much. Oats have large coarse grains. It is difficult to make bread from oats. Oat bread will usually crumble into pieces and the slices will not remain intact. In spite of excellent crops of wheat and rice, the farmers of Uttar Pradesh eat coarse grains. The large variety of oats is called jaori and the small variety is called rye in Sanskrit. Some people consider these as completely separate varieties. In rich countries oats are used as fodder. In Great Britain, England is fertile but Scotland is infertile, hence wheat

grows well in England but oats are grown in Scotland. Oats are also grown in the northern parts of Russia. Oat porridge is a staple food of the Scottish people.

Some time ago India was dependent upon other countries for the supply of wheat but now it is self-sufficient in wheat production. Bengal grows a lot of wheat. When Bengal started producing wheat in Nadia district about thirty years ago, the wheat seeds were mixed with oat seeds. As a result the oats began to grow better but they did not produce seeds, while the wheat did not grow properly and produced only small harvests. Consequently, the government decided to supply better quality wheat seeds to the farmers. Wheat is also grown in Burdwan, Hooghly and Howrah districts.

The cultivation of boro is quite profitable. In western Rárh wheat grows better than boro, but

in the low-lying areas boro may be cultivated. In Nadia district wheat is more profitable than boro. Nowadays boro is being cultivated with the help of deep tube wells, but this system of irrigation is not scientific. The same amount of water which is brought to the surface does not seep back down into the water-table because much of the water dries up due to the hot sunshine or is absorbed by the trees and plants. Hence, the water-table is rapidly declining. If the practice of deep tube well irrigation continues in Malda, Nadia and other districts, the water-table will decline so much that one day there will be no water for irrigation, and the grain crops and fruit orchards will wither and die. The farmers must be very vigilant about this problem. The wisest approach is to depend upon surface water for irrigation.

To save the Calcutta Port, the navigability of the Bhagirathi River must be maintained at any

cost. The government of India constructed the Farakka Bridge to divert water to the Calcutta Port. Today Bangladesh should get as much water as India through the Bhagirathi, otherwise the rivers in Bangladesh will dry up and the economy of the country will be ruined. So the waters of the Brahmaputra should be diverted toward Rampur, Dinajpur, Malda (Manikchok) and finally merge in the Ganges. The natural course of the Brahmaputra is through Dugri, South Shalmara, Mankachar and on to Maymansingh. From there the river flows towards Bahadurabad, takes a left turn and proceeds towards Barabazar and eventually arrives at Mezra. From here the Brahmaputra commences a new course via Pabna and Sirajgunge. Even 150 years ago this course of the river was non-existent. Once the Tista River was heavily flooded and the Brahmaputra could not absorb the extra flow of water, so a new course was created because the river turned right and

went all the way to Goalanda in Bangladesh and then merged into the river Padma. The old course of the river became a stagnant lake, and as a result there was a devastating outbreak of malaria in Maymansingh. The water in the newly-created section of the Brahmaputra has been well utilized by the people of Bangladesh. The water of the Brahmaputra can be easily diverted at Dhubri and this will not cause any difficulty for Bangladesh. Hence, in my opinion the people of Nadia should not unnecessarily bother about installing many new shallow and deep tube wells for irrigation.

Although the nutritional value of wheat is higher than that of sun-dried rice, wheat causes acidity. After about fifty to fifty-five years of age people who eat wheat excessively may be affected with gastric trouble and colic pain. Sometimes one may even be affected by tuberculosis and a malnourished brain. So wheat

only should not be eaten twice a day. The people of Bihar undertake a lot of physical labour, but they eat wheat during the day and rice at night.

It is not profitable to use wheat stalks in the preparation of paper, but they can be used for fodder. Wheat husks are not good for pigeons and parrots because they will cause the birds stomach trouble.

It is difficult to distinguish between the seeds of wheat and of oats. The government of West Bengal should open a farm in Bankura to grow wheat seeds for cultivation throughout the state.

Poppy seeds can be cultivated with wheat as an associate crop. Poppy seed is a favourite item of the people of Rárh. West Bengal buys at least fifteen million rupees worth of poppy seed a year, but the central government does not allow the people of North Bengal to grow poppy seeds.

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There is a popular myth which says that if a wage labourer in Rárh earns eight paise a day he will save three paise and shop with five paise, buying three paise of rice, one paisa of oil, salt and spices, and one paisa of poppy seeds. The people of Rárh can forgo fish and meat, but they cannot do without poppy seeds. The seeds of poppy are sentient, the plant is mutative, and the sap is static. Poppy sap is intoxicating, hence it is called ahiphena in Sanskrit. Ahi means "snake" and phena means "foam". The English word "opium" comes from the Sanskrit word ahiphena.

The seeds of almost all grasses are sentient. Sun-dried rice, which is usually prepared by soaking paddy and drying it in the sunshine, is also sentient. The women of the carpenter families in rural Bengal usually prepare beaten rice. If cooked rice is soaked in water overnight together with tamarind it ferments, and if the

next morning the water is poured off and used with salt and chilli, it is called ámáni, which is static. Ámáni is a medicine which prevents sunstroke. Coca-Cola, Campa-Cola, etc., are mutative. Monks, nuns, missionaries and probationary monks and nuns should avoid static and mutative food. Fresh wheat is sentient, but when it is fermented for the purpose of preparing alcohol, it becomes static. All liquor or alcohol prepared by distilling wheat is static. Distilling apparatus was invented by the Buddhist monk Nagarjuna. Wheat porridge is sentient, but beer is static.

Wheat has two main varieties – early (dudhiya) and late (lalka) varieties. The late variety is the more tasty. Today people are trying to increase the production of wheat, but the wheat which is grown today is not as tasty as it used to be. Personally, I am in favour of encouraging science. I would like to appeal to

the agricultural scientists to pay as much attention to the taste of wheat as to the amount of production.

Oats and rye make good fodder, particularly in rich countries, where they are often used as fodder for horses. In India poor people also eat these grains. Rotten wheat flour which even animals refuse to eat is sometimes used for food in the poor countries of Asia.

Maize

Maize or corn is an indigenous American grain and was brought to India from the USA. It grows all year round and takes sixty to eighty days to mature. In some parts of India, a particular variety called Rajendra bhuttá takes about fifty days to grow, but the quantity of production is low. This variety of maize was

named after the first president of India, Dr. Rajendra Prasad.

Maize prefers fertile soil and a dry climate. Water must not accumulate at the root of the plant. Conversely, jute requires a damp climate and plenty of rain. By grinding maize we get coarse flour, but it is difficult to prepare small pieces of bread from it. Big pieces of bread can be made with some effort. Maize bread is called manda or mańra in Angika. If the skin of maize is removed, ordinary quality flour can be produced. Some dishonest businessmen mix maize flour with the flour of other grains. Maize flour is not very good at holding water.

Corn is often fried in a pan to make popped corn, which does not have much taste but is nutritious. Popcorn can also be turned into beaten corn, just like beaten rice, but the corn should be soaked in water and boiled before

preparing it. Japan is a rich country, yet the breakfast commonly eaten by the people is corn flakes.

Bihar and Assam in India import rice from other states of the country, but Uttar Pradesh does not import rice because the people there eat less rice. The Burdwan district produces two and a half times more rice than what is required by the local people.

If there are good rains in Bankura, Purulia and Coochbehar during the paddy season, these districts will not suffer from deficit production. But Howrah, 24 Parganas, Nadia, Murshidabad, Malda, Jalpaiguri and Darjeeling districts are always deficit areas. Of these districts, Darjeeling is a hilly region, and enough maize grows there to supply food for only five months of the year. The food supply for the other months of the year comes from the plains of Bengal. Burdwan

district gets water from the Damodar Valley Corporation, so it can produce three paddy crops – aman, áus and boro. Howrah district can easily produce three paddy crops in a year also and be self-sufficient in food production.

Maize is an all-season crop which can also grow in barren soil. In Darjeeling, as the land is hilly, maize should be grown by terracing the land. Winter paddy is grown almost everywhere in Bangalistan in early or late autumn, so there is not much scope for the cultivation of maize. During the other seasons such as spring and summer maize can be cultivated, or it can be grown as a buffer or boundary crop between two other crops.

Some people think that in the Bhutan Plateau no crop other than maize can be grown, hence they say that it is wise to cultivate as much maize as possible. Maize is called makai in Hindi,

but bhuttá in Bengali. In those parts of India where the climate is dry and the rainwater does not accumulate, maize can grow in abundance.

Pulses

The consumption of static types of animal protein by human beings is slowly but surely coming to an end because there is a shortage of pasture land to graze animals. Even a few decades ago in India there used to be large open fields to graze cattle. People would collect the cow dung and use it as manure. Due to the increase in population and other natural factors, these vast pasture lands are fast disappearing, so cows and buffaloes are also disappearing. Fish, meat, eggs, milk, cream, butter and cheese are all animal proteins. Milk, cream, butter, etc., contain much fat. If the present trends continue, in the not too distant future animal proteins may not be available at all.

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Different countries have different types of staple foods. For instance, rice is the staple food of Bengal; potato is the staple food of Ireland; and bread and butter are the staple foods of some other countries. A time will come when the populations of the meat eating countries will be in great trouble due to the absence of animal proteins. Cows can be tied to a fixed place, but sheep require vast tracts of land. Similarly, in the absence of suitable pasture land, it will be impossible to rear goats, hens and ducks. Naturally, we will have to depend more on pulses as the only viable alternative to animal protein and fats.

Of all the states in India, Gujarat has the most vegetarians. The people there depend upon vegetarian protein like pulses and prepare various food items with pulse powder. Pulse cakes are a very good food for post-convalescent

tuberculosis patients. In Bangalistan the most readily available pulses are first Bengal gram (cháná), then cow pea (aŕahar), then green gram (mug), then lentil (masur), then peas (maťar), then kurti. Of all the pulses, black gram (biri kalái), Bengal gram, cow pea and green gram have the most food value. Cow pea provides reserve energy and physical strength, while green gram supplies instant energy but no reserve energy. Black gram provides both. Cow pea is more difficult to digest than green gram, but Bengal gram is even more difficult to digest. Black gram is comparatively easy to digest.

The quantity of pulses grown in Bangalistan at present can only meet the demands of the people for five months of the year. The rest of the demand is met by importing pulses from other states of India. In Bengal only Nadia district is self-sufficient in pulse production. Malda and Murshidabad somehow manage to

meet their own needs if all the varieties are taken together. As far as black gram is concerned, Birbhum, Burdwan, West Dinajpur and Coochbehar are self-sufficient. A certain amount of black gram is exported to the Punjab and Tamil Nadu from West Bengal.

If the people of Ráŕh do not eat poppy seeds, pulses or plum chutney, they will not feel that their diet is balanced, but if they overeat these items from the early spring to the end of summer, the dry and rough climate of Ráŕh will affect their health and blood will flow from their noses. The nutrition in lentils is less than in the other pulses, while overeating peas leads to skin allergies. All lentils are mutative during the day and static at night. Pulses get sour at night and then become reddish. Those who want to develop their intellect should refrain from eating lentils. As lentils tend to be static, Ánanda Márgiis should avoid them too.

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After harvesting áus or aman paddy, the field should be carefully ploughed and the big variety of pink Bengal gram, the big variety of peas and the big variety of green gram should be sown. For three to four months after harvesting aman, there is no water in the fields, but during the early part of Áshvina, the soil remains somewhat muddy and sticky. At that time the small variety of Bengal gram, peas, lentils and horse gram should be soaked in water overnight, and after they have sprouted, they should be sown as “pigeon crops”. Just as food grains are scattered before pigeons, the seeds of some pulse crops are scattered in a field as “pigeon crops” or secondary crops. The big variety of gram cannot be sown as a secondary crop because in the month of Áshvina the paddy grows quite tall, so the sun’s rays cannot penetrate through the paddy to the field, hence the seeds of the “pigeon crop” will not sprout. Black Bengal gram, black

pea and lentil can be used as “pigeon crops”. The leaves of the small variety of peas are a little bitter and are harmful for the stomach. When paddy is harvested the tops of the pulses are cut off, so new offshoots grow from the pulse stalks. This process produces a large number of new offshoots from the stalks, increasing the overall production of the crop. The offcuts can be used for fodder. It is not necessary to apply fresh manure at this time because the pulses will extract what they need from the unconsumed nutrients still in the soil from the previous manuring. After the secondary crop is harvested in the month of Phálguna, mustard and summer soybean can be grown in the same field.

Usually at this time most of the land in Bengal does not lie fallow. After the áus paddy is harvested the land is often ploughed twice, and then the large varieties of pea and Bengal gram are grown, provided there is adequate provision

for irrigation. The big variety of pea, Bengal gram and lentils are white, pink and red respectively. When pulses are ground by hand they split in two, but if they are ground in an improvised grinding machine with sand, they will not split apart.

If khesári is overeaten, it is harmful for the stomach. Khesári does not smell or taste good, and it sometimes causes paralysis because it contains poison. Just below the skin and just above the surface of the pulse poison develops, and this is what causes paralysis. I heard that the government had developed a variety of khesári which is not bad for the stomach. If one wants to avoid the adverse affects of khesári, it should be soaked overnight and thoroughly washed the next morning. Through this procedure the poisonous substance on the pulse will be washed off.

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In Rajanagar, Dubrajpur, Mamudbazar, Murarai and Rampurhat blocks, pulses can be grown after the paddy is harvested. The chaff of khesári is a good fodder for cattle. Pulses are very nutritious for human beings.

The water and air of Ráŕh are good for health, and the people of Ráŕh have a strong physical structure. But as they do not get nutritious food, they do not get the scope to develop properly. The people of Purulia, Bankura and other adjoining districts easily contract leprosy because they lack nutritious food. Although there is poverty in Birbhum district, the people there do not suffer from leprosy. The reason is that the subterranean soil of Birbhum district contains a lot of sulphur.

The Sanskrit word for “pea” is kalaya, and the Sanskrit words for “Bengal gram” are canaka and buńt́ika. From canaka comes the North

Indian word cháná, and from buńtika comes buṫ. Cháná is the big variety of Bengal gram. The Sanskrit word for khesári is triputi, and the English is “horse gram”. The Sanskrit for biri kalái is maśa kaláya, and the English is “black gram”.

On elevated land in moderately fertile soil, black gram grows well. Associate crops such as soybean, peanut and sunflower can also be grown. Black gram takes four to five months to grow. If the land is manured excessively, pulses will grow very large but they will not produce seeds, so the branches should be cut. These offcuts can be used for fodder. Similarly, if paddy land is manured excessively, the plants will grow very large but the harvest will be smaller.

Green gram (mug) has several varieties. Golden gram (soná mug) grows all the year round, but it should not be grown in the rainy

season. Green gram can be grown throughout the year while black gram grows only once a year, so it is better not to grow green gram in land which is suitable for black gram. Green gram can be grown as an associate or secondary crop with any other crop, and the plants are good fodder for cattle. When the seeds mature, the plant should be harvested. The difference between green gram and other varieties of pulses is that the seeds of green gram can be readily separated by tapping the plant lightly.

In the early part of the rainy season the seeds of cow pea (aŕahar) are spread on the soil. Cow pea has two main varieties – late winter (mághii) and late spring (chaetii). In the Balagarh subdivision of Hooghly district and in Nadia and Murshidabad districts these pulses grow easily. Castor can be grown with cow pea as an associate crop, ensuring that every piece of

land is properly utilized. Áus can also be grown simultaneously.

In the month of Kárttika the land can also be used for tuber crops such as sweet potato and red potato. Both crops can be grown together. In Nadia district cow pea and áus are usually grown together. In all the high arid land of West Ráŕh, áus and cow pea can be grown together. The land should be utilized all the year round.

Silkworms which live on castor leaves can also provide a lot of silk, and much cheap silk can be gathered in this way and used for clothing. Castor is both a cash crop and a food crop.

Tobacco

Dumka, Dunbad, Purulia, Singbhum, Bankura, Jharagram and West Burdwan were all full of

kendu trees. These trees also grow in Birbhum district. The great poet Jayadeva was born in a village called Kenduvilla. In Calcutta the kendu fruit is called gáb, and in Rárhii Bengal indigenous cigarettes (kendu biŕis) can be made from kendu leaves.

As long as the biŕi industry remains, kendu leaves will be used commercially in Rárh and other parts of India. After people stop smoking biŕis, kendu leaves will lose their commercial importance. Biŕis are cheap stimulants for poor people. When people realize that smoking biŕis is detrimental to their health, they will act according to the principles of psycho-economy and reject kendu leaves on the one hand and tobacco on the other. At that time, the tens of thousands of labourers who work in the biŕi industry will have to be provided with alternative employment.

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The tobacco produced in Burma and some other countries is of better quality than Indian tobacco. The custom of chewing tobacco (dokta) leaves among young women is gradually dying out. The people of North India are also discarding the habit of chewing tobacco.

As long as people in India continue to smoke cigarettes, tobacco will be grown in India, and the forestry departments of different states will earn some revenue by selling kendu leaves. At present Purulia, Dhanbad, Baharampur, Manbazar, Barabazar, Jhargram, Visnupur, Malda, Dhulian and Pakur are prominent centres for the biŕi industry. Most of the people involved in this industry are tribals and Bengali Muslims. Recently, some people of the Mahato community have also become engaged in this industry. Most of the labourers working in this industry suffer from lung diseases.

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CLOTHING

The clothing that people wear in a particular region depends upon two factors – the local climate and the availability of raw materials to make fibre. Let us discuss these factors in the context of Bangalistan.

The raw materials available in Bangalistan are mainly of four types – cotton, mulberry silk, non-mulberry silk, and synthetic silk and other materials.

Cotton

Cotton is of two types – tree cotton (gách kápás) and bush cotton (chás kápás). Cotton trees bear fruit after three to four years and then die. They require a dry climate to grow properly, so although Ráŕh and Tripura may grow cotton trees, Burdwan and Purulia in Ráŕh are the ideal

places. This variety of cotton is also called dev kápás. In Murshidabad, Nadia and Dhaka, cotton trees will not grow well, but from these areas high quality silk cloth was once exported to overseas countries. Even today expert silk weavers can be found in this area. Silk fibres usually come from Malda, Bankura, etc. Those districts are not famous for tree cotton but are ideal for bush cotton. The Punjab, Harayana and Maharashtra grow bush cotton. Cotton trees may grow, but not very well. During the Pathan period in India North Bengal and Tripura were famous for manufacturing fine silk clothing.

Bush cotton can grow very well in Rárh and Tripura. After hybrid paddy is harvested, bush cotton can be grown from November to February in vacant paddy land, and simultaneously sweet potato can be grown. From sweet potato we can get four by-products – raw sugar, molasses, yeast and alcohol. Rárh

and Tripura can grow both tree cotton and bush cotton, whereas North Bengal and Bangladesh can only grow bush cotton.

Mulberry Silk

Mulberry silk can grow well in Ráŕh and to some extent in Central Bengal, Tripura and North Bengal. If mulberry silk is grown in Tripura, alot of money can be earned. The climate of most parts of Bangladesh is not suitable for mulberry silk, but the climate of Rajahsahi, Rongpur, Dinajpur, Jessore and Kushtia is somewhat dry, so these areas can easily grow mulberry silk. Mulberry silk can be used to produce two types of high grade silk wrappers – fine quality silk and rough quality silk. Fine silk can be produced in two colours – milk white and cream. Fine silk is called garad, while rough silk is called matka. Rough silk is

used to produce pants and jackets and is usually a dark colour.

Non-Mulberry Silk

In North Bengal, Tripura and Bangladesh, non-mulberry silk will grow very well. Non-mulberry silk includes tasar, endy and muuṇgá. Endy can be grown from castor trees, muuṇgá from drumstick (Moringa oleifera Lam.) trees and tasar from plants such as sal [Shorea robusta Gaertn. f.], Indian plum and Indian rosewood. Tasar is of two types – one is fine and subtle, and the other fine and coarse. The fine tasar can be used to make shawls, and the coarse to make coats.

Synthetic Silk and Other Materials

Nylon, rayon and jute's-wool come within this category. Nylon fibres can be made out of

coconut fibres, paddy husks and jute. Rayon can be made from jute skin, pineapple leaves and banana stalks. Tripura enjoys special providential favour in this regard. The nylon and rayon industries can make enormous profits.

Rárh and Tripura can also produce good quantities of wool because they have sufficient pastures to graze cattle and sheep. It is not difficult to rear sheep in Rárh. By mixing the wool of Rárh and Tripura and nylon made from the jute of Central Bengal, jute's-wool can be produced and used to make high quality warm clothing. Jute's-wool cloth will be very useful for the people of Bengal in winter.

We can manufacture four by-products from the coarse fibre of jute – hessian cloth, carpets, suiting and shirting. Spinning mills for manufacturing suiting and shirting should be well established. Clothes can be made in every

house as a cottage industry, and women and children can also participate. In every subdivision of Bengal there should be at least one spinning mill. These days fine fibres are being produced from linseed, okra and sesame, and are sent to Ahmedabad to produce fine cloth. Throughout West Bengal linen cloth can be prepared in abundance. Linseed and sesame skins can also be used as an alternative food to coarse wheat flour. From linseed we can get four by-products – fertilizer, food, oil and fibres. From okra we can get four similar by-products. We can also produce plastic to make shoes from coarse jute (mestá pát). Plastic can also be made from hyacinth. Mestá pát is called jute though it is not really jute. The Sanskrit term for real jute is called patta or kaśťá. 3,000 to 4,000 years ago, the women of Bengal used to wear fine jute clothing.

BUILDING MATERIALS

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Building materials include vehicle building materials, house building materials and other building materials.

Vehicle-Building Materials

Vehicle-building materials include shipbuilding materials. Bengal has an old tradition of shipbuilding. Since the Vedic Age, more than 5,000 years ago, the engineers of Bengal have known how to build ships. Most of the shipbuilding yards were located in South Bengal – Midnapore, Howrah and 24 Parganas. Midnapore was in Danda bhúkti, Howrah was within Burdwan bhúkti and 24 Parganas was within Nadia or Samatat bhúkti. In Khulna, Bakharganj (the old name was Chandradipa), Noakhali (the old name was Bhalluka, but later it became Bhulua) and Chittagong in Bangladesh there were shipbuilding centres. The engineers

of these regions were experts in shipbuilding. As a huge stock of garán or sundari wood was available in South Bengal, which was ideal for shipbuilding, the industry thrived. Boats and small ships were made with garán wood. Carpenters and fishermen would make small fishing boats with this type of wood. Even today, plenty of wood necessary for building boats and ships is readily available in the Sundarbans in South Bengal.

The metals necessary for shipbuilding are available in Rárh, where there are large deposits of iron ore, manganese, copper and silver. Various types of metals necessary for building ships are also easily available in Bengal, so Bangalistan can easily be self-sufficient.

The total area of the Sundarbans is 4,000 square miles. Out of this, 1,600 square miles fall within West Bengal and the remaining 2,400

square miles within Bangladesh. Bangladesh has cleared a major part of the Sundarbans and converted it into arable land. Even today in South Bengal the shipbuilding industry can easily be established at Khulna, Bakharganj and Noakhali in Bangladesh, and in Basirhat, Diamond Harbour and Alipore in West Bengal.

One of the most important materials for building vehicles is rubber. A vast area of North Bengal comprising the Duars, the Tarai, Goalpara, Kokrajhar, and Jhańpa now in Nepal can produce much rubber. Rubber can also be grown in Tripura. Rubber cultivation requires moderate rainfall, laterite soil and wavy land, so Bangalistan can easily produce sufficient amounts of rubber. The remaining materials necessary to construct vehicles can be easily produced in Rárh, including manganese, mica, silver, mercury, quartz and copper. Jhalda, Arsha, Puncha and Jaipur in Purulia district, and

Khatra in Bankura district, have large deposits of these raw materials.

House-Building Materials

All of North Bengal, Tripura, and the Chittagong Hills can develop a flourishing house building materials industry. The most important materials for house building are bricks and cement. Bricks and tiles can be easily made throughout Bangalistan.

The necessary amount of lime can be produced from limestone and ghuting, a kind of clay which is about ninety percent lime. Besides this, there is a huge stock of calcium carbonate and calcium hydroxide in Rárh; lime can also be produced from these materials. In the northern parts of Jalpaiguri, in the Jayantia Hills, there is a good supply of dolomite and limestone. Dewangari was previously in Bengal, but at the

time of independence it was given to Bhutan. It has a large stock of dolomite and limestone which can be used to produce lime. Sufficient quantities of lime necessary for the house building materials industry can also be produced in the coastal areas of South Bengal from shells and oysters. Large deposits of limestone available in the southern part of Rárh are now in the hands of Marawari merchants. They export huge quantities of lime to other parts of India which is used in the cement industry. At Jhalda, Purulia and Bankura cement can be easily produced from limestone, ghuting, dolomite, oysters and conch shells. In the northern part of Sylhet there are also limestone deposits. In Khaosia, Jayantia Hills, Maulavi Bazaar and the remaining parts of Sylhet district, except Habiganj, there are deposits of limestone.

The soil of Rárh contains a good percentage of calcium which is why it is ideal for growing

oranges. Calcium carbonate and calcium phosphate are also available in Rárh.

I am certain that the amount of cement necessary for house building will be easily available in certain parts of Bangalistan. High quality cheap cement can be easily produced from the husks and stalks of aman paddy mixed with ghuting lime. Cement factories based on the husks of paddy can be established in Rárh, North Bengal, Maymansingh, Sylhet and the southwestern parts of Tripura. Cement can be readily manufactured in these areas. Cement can also be made from mixing ghuting and limestone.

Another house building material is sand. Mogra is situated by a stagnant tributary of the Damodar River which contains large quantities of high quality sand.

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Previously, the people of North Bengal and the eastern districts of Bangladesh would collect house building materials from Tripura. For example, they would bring chan grass to thatch houses. Bushes and bamboo can also be used as house building materials.

Beside every road in Rárh there is plenty of ghuting. In the coastal areas of the Bay of Bengal there are plenty of sea shells and oysters which can be utilized to produce lime. At Jhalda we must establish cement factories immediately. Except for Habiganj, all of Sylhet has limestone deposits.

As I see it, in almost every village of Bangalistan there can be cement factories. Within a period of six to seven days a house can be built.

Other Materials

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Brahminberia in Maymansingh has deposits of underground natural gas. Naranganj and Barabazar in Dhaka district also have underground natural gas. Natural gas can be used as fuel. Doors, windows and accessories for house building, and other building materials, can all be manufactured in factories throughout Bangalistan.

EDUCATION MATERIALS

The natural vehicle for the expression of internal ideas is one's mother tongue. Bengali is the mother tongue of the Bengali race, whose original boundary was the Arakans in the east, Ramgarh or the Pareshanath Hills in the west, the Lower Himalayas in the north, and the Ganges Delta of the Bay of Bengal in the south. The southern deltaic region was built up by the branch rivers and tributaries of the

Brahmaputra and Ganges Rivers and the rivers of Rárh. In the Vedic Age Bengal was called Bangabhumi and Samatat. The Rárh area was called Ratla. In Persian the word for Bengal was Bangal; in Turkish, Bangala; in Latin, Banjala; in Chinese, Banjal; in Sanskrit, Vauṇga or Rárh; in Bengali, Bangladesh; in Urdu, Bangal; and in English, "Bengal".

Bengali is one of the Prákrta languages of the Mágadhii group. Mágadhii Prákrta originated about 3,500 years ago. Modern Bengali originated about 750 years ago, and the Bengali script about 1,200 years ago. (The Bengali race is about 5,000 years old). Bengali is now the mother tongue of 160 million people.

The natural medium of expression in Bangalistan should be Bengali. The second language as a medium of expression should be English, because English is the link language

with people who speak other languages. Besides this, the Sanskrit language should be taught as a compulsory language in the lower classes.

Bangalistan has been a principal education centre in the world since earliest times. Even about 5,000 years ago, Chinese scholars used to come to Bangalistan for higher study. There were three great seats of learning in Bengal – Vikramanipore, or present Vikrampore in Bangladesh, Burdwan and Contai.

The most important material for education is paper. The raw materials to make paper include jute, mestá páť, stalks of boro paddy, corn cobs, hoop pine, vicali grass and bamboo, which can also be used to make nylon.

The other essential materials for education, such as fountain pens, nibs and ink pots, are easily available in Rárh. Plenty of raw materials

to make writing ink are also available in Rárh and include hematite, blue vitriol, ferrum sulphate and indigo. Through synthetic processes, all kinds of colour inks can be made.

So, there is no reason why Bangalistan cannot be self-sufficient in the production of all the materials necessary for education.

MEDICINES

Rárh has huge deposits of minerals. If all these materials could be properly utilized, a large number of industries could easily be established. To tell the truth, Rárh has greater industrial potential than even the Ruhr region in Germany. In Rárh there are extensive deposits of coal, coal gas and natural gas. These mineral resources are extremely useful in building industrial complexes. All raw materials for making items such as glass and laboratory

instruments are also easily available in the southwestern part of Bangalistan, particularly in Hooghly district. In Bengal there are abundant resources of lead, manganese, iron ore, copper and mercury. These materials and metals can be widely used to manufacture medical equipment.

Medicinal Plants

Bengal is a land with a hot and humid climate. Most of the people who live in Bengal are poor. Naturally a large percentage of the people suffer from fever, diarrhoea, dysentery and dyspepsia. Many of the medicinal plants which are essential for the treatment of such diseases are available in various parts of Bangalistan.

The most important regions for medicinal plants are the Duars, Goalpara, the plains of Darjeeling district in North Bengal, and Jhańpa district. These areas abound in medicinal plants.

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Jhańpa district is now part of Nepal, but previously it was included in Coochbehar. The Gorkha leader Prithvi Naryan Saha forcibly seized this district from the king of Coochbehar. The language of this district is Rangpuri, a dialect of Bengali. The Duars and other areas in North Bengal are very rich in medicinal herbs. To cure common diseases such as fever, stomach problems and dysentery, people can easily use these medicinal herbs.

Of all the remaining regions which are rich in medicinal plants, Assam, Meghalaya and the Sundarbans is the second most important area. The third important area is Rárh and Tripura. The rest of the plains of Bangalistan are used extensively for paddy cultivation, so obviously in those areas medicinal plants will not be available.

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Rárh is the richest area in Bengal as far as the availability of mineral medicines, and includes Jhargram, Birbhum, Dhanbad, Purulia, Singbhum and the Bengali speaking areas of Ranchi district. The resources in these areas can be easily utilized for preparing medicines. For instance, in this region plenty of antimony and urea can be found. Quinine can also be found in the Kurseong Hills, Ayodhya, Tilabhani and the Dalmar Hills.

Plenty of materials for making medicinal instruments are available in the Kurseong Hills of Darjeeling district. Medicinal plants are also plentifully available. The Kalimgpong Hills, which has a humid climate, is not an ideal place for medicinal plants. The previous name for Kurseong was “Kharsan”. Once it was a part of Sikkim. The name “Kharsan” is wrong. The previous name of Siliguri was “Dalimpir”, and once it was a part of Bhutan. The king of Bhutan

once forcibly occupied this region. The previous name of Darjeeling was “Dorjiling”.

Of the various medicinal plants, jatamangsii and ipikak grow well at high altitudes. A large area from Jhalda to Angara – that is, Jhalda, Muri, Silli, Gautamdhara and Angara – is an ideal place for cultivating herbs. This particular region of Ráŕh experiences greater rainfall than the other regions of Ráŕh. Plenty of medicinal plants can also be acquired from Sabrum, Panisagar and Dharmanagar in Tripura. In the forests of the Sundarbans, plenty of medicinal plants can be found. Saline soil itself has medicinal value. Starch which is used to stiffen shirts can be made from gol fruits. Plenty of gol trees grow in the Sundarbans. Similarly, the Garo Hills of Meghalaya and the Hojai and Lanka subdivisions of Nagaon district in Assam can supply plenty of medicinal plants.

Mineral Medicines

Plenty of mercury is available in Rárh, along with other mineral resources. Mercury in the crude form of mercury sulphate can be found. There is also plenty of copper. If mercury and copper are mixed, many types of medicines can be made. The Tamakhun area of Manbhum district is full of copper. Copper was profitably exported to overseas countries in the past from the port of Tamralipta. In olden days boats and ships plied on the Kangsavati River, but now the same river has almost dried up.

PROFITABLE INDUSTRIES

The profitable industries in Bengal are mainly of two types – cash crops and non-agricultural industries.

Cash Crops

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Sufficient black pepper can be grown in Tripura because the climate is congenial there. Of course, Tripura already grows black pepper and hot chilli, but the production should be increased. There is a very good market for hot chilli in Bangladesh.

Bengal is deficient in the production of pulses. It only produces enough pulses to meet the demand of the people for five months of the year, so for the remaining seven months pulses are imported from outside. After áus paddy is harvested, three crops of green gram can be grown. Golden gram can be grown on the field after the paddy has been harvested. After one month when the hybrid variety of áus is harvested, the tops of the green gram will be lopped off. Many shoots will grow from the stalks which can be harvested after sixty days. Through this process golden gram can be

harvested three times a year. The offcuts can be used for cattle fodder.

There are two main varieties of cow pea – the late winter variety (mághii aŕahar), also known as the “small” variety of cow pea, and the late spring variety (chaetii aŕahar), also known as the “big” variety of cow pea. Besides these two, there is another variety of cow pea, the late autumn variety (ághanii). In the high and barren land of Ráŕh this variety of pulse can be grown with áus paddy. Black gram can grow in abundance in Bengal. It is a five month crop. It grows abundantly in Coochbehar, Dinajpur, Burdwan, Malda and Purulia.

Bengal gram is a five month crop. It is spread in the wet aman field in those areas where there is a shortage of water. If you want to grow the big variety of green gram, the seeds should be sown in October after harvesting the hybrid

paddy. This crop is harvested in Caetra, the last month of the Bengali year.

Horse gram is grown in abundance throughout Bengal, but it is not good for health as it can cause paralysis. These days there is a new variety of gram in the market which is a bit soft. Although it is a four month crop, its cultivation is not very profitable.

Nadia, Murshidabad, Malda, Raiganj, the Islampur subdivision of Dinajpur district, the Mekhlinganj subdivision of Coochbehar district, and parts of Jalpaiguri district minus Dinhata subdivision are ideal for the cultivation of wheat. Lentils can be grown in the wheat field as an associate crop. In the comparatively dry regions of Tripura, green gram can be grown early. If the production of pulses is increased, the total amount of pulses grown in Bengal will be more than the requirement of the people, and the

surplus can be exported. All varieties of pulse except lentils are presently imported. The surplus pulses grown in Tripura can be exported to Bangladesh. The skins of pulses are very healthy fodder for cows. As there is a shortage of pasture lands, the chaff of pulses can be used as a good cattle fodder.

Rubber is a very good cash crop. Rubber can be grown in abundance in those areas of Bengal which have plenty of rainfall; the land is wavy but rainwater does not accumulate. In Jalpaiguri, Darjeeling, Dhubri, the northeastern part of Cachar district, and Tripura, rubber can grow particularly well.

For cocoa cultivation extensive and heavy rainfall is required. For coffee, a moderate amount of rainfall is required. Coffee can be grown in the Birbhum, Purulia and Bankura districts of Rárh. Coffee can be cultivated even in

the dry infertile land of Rárh, but tea cultivation may not be so profitable. There is much similarity between Tripura and Rárh, so coffee can be grown in both places. Similarly, cocoa can be grown in Tripura. Cocoa trees are called “cacao” and the fruit is called “cocoa”.

Jute is also a cash crop, but instead of using jute for sacks, it could be better utilized in making coarse clothing. In Cachar, Sylhet and the Sabrum area of Tripura, oranges can be grown, but not abundantly. In Tripura and southern Bengal cashew nut can be a good cash crop. It was first cultivated in Midnapore, and was known as hijli bádám. Cashew nut has tremendous food value. It is also a very lucrative cash crop. In the Contai subdivision of Midnapore, cashew nut is being produced on a large scale.

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Bangladesh has only two cash crops – raw jute and hide. If hide is tanned and exported to different countries, it may bring in a lot of foreign exchange. But as there is no developed tanning technology in the country, Bangladesh sustains heavy losses by exporting untanned hides to foreign countries. If people continue to use plastic goods instead of leather products, then both the jute and leather markets will suffer severely. I am sorry to say Bangladesh does not follow the rules of nature.

Of all the sericultural items, silk and lac are the most important cash crops. Non-mulberry silk can be grown on Indian plum trees, and high quality silk can be grown on kusum trees. Lac is of three varieties – Jhalda, Murshidabad and Baharampur. These three places are famous for lac production. There is a good market for lac throughout the world. In Bengal the demand is decreasing day by day because once Bengali

women would use lac ornaments, but now this practice has gone out of fashion.

In Bangalistan beeswax does not have a good market. Paraffin wax has supplanted beeswax. Beeswax has great medicinal value. For beekeeping, the best places are the Sundarbans, Meghalaya, Tripura and Rárh. Beeswax cannot compete successfully with paraffin wax.

In olden times paddy was regarded as the goddess of fortune, and the husk was called tus. About 1,200 years ago, Mansingh lived in Rárh and Manbazar was the capital of his kingdom. He had two daughters, Bhádumani and Tusumani. After he died, Tusumani ascended the throne and became a very popular queen. In Rárh there is a festival called “Tusu” in her honour. Unfortunately, these days tus is indiscriminately burnt.

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There are several types of land from the viewpoint of the retention of water, and include:

1) High and dry land (tánŕ land). This land is barren and little or no water is retained in the soil.

2) Barren plain land (bad land). Barren plain land will hold water in the soil with some effort. Áus and aman can grow to some extent.

3) Average land (kańali land). This type of land will hold water for a longer period than barren plain land, but it is inferior to moist fertile land.

4) Moist fertile land (bahál land). This land retains water well and is suitable for most types of farming.

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Although high and dry land is not ideal for the production of cash crops, some crops can be grown profitably in this type of land. For example, some crops that can be grown permanently in high and dry land include palmyra; dates; bakul [Minisapes elangi]; kheyer [Acasia catechu Willd.]; Indian plum; kusum [Schleichera trijuga Willd.]; and palash [Butea frondosa Koenig-ex Roxb.]. A temporary crop which can be grown in the same type of land is lemon grass for the cosmetics and medicine industries. If high and dry land can be ploughed, then in the month of Aśádha, the first month of the rainy season, cow pea and either the Rajendra bhuttá variety of maize (a forty-five to fifty day crop) or early áus can be grown together. After sixty days when cow pea is harvested, áus will remain in the field and be harvested in Áshvina. The stalk of the early variety of áus is good cattle food and can be used for bran oil.

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The seeds of maize or corn are human food, the cobs can be used in the paper industry, and the stalks are a useful cattle fodder. If corn is fried in an earthen pan, popped corn is produced. If corn is fried and ground before the corn pops, fried corn flour is the result. If the corn is ground without removing the skin and without frying, coarse corn flour is obtained.

After maize is harvested, sweet potato can be planted in the holes in the ground. The potatoes should be watered by sprinkling water on the field until new leaves grow. After that, water will not be required. Sweet potato has more nutrition than red potato.

Sunflower can be grown with maize as an associate crop. Sunflower and maize cannot be grown as associate crops with áus. The sunflower and maize draw moisture from deep

below the soil, and that moisture also helps in the growth of the red potato and the sweet potato.

Sargujá or niger can be grown on high and dry level land which cannot be ploughed or dug with a spade but can be broken with some difficulty. Niger can be grown in the high and dry land of Rárh. The oil has a pungent odour, which is why many people do not like to use it, but if it is deodorized it can be widely used. Cow pea, áus and sunflower cannot be grown in high and dry land, but sábui grass can be grown and is very useful for the paper industry. Lemon grass too can be grown and can be used for preparing medicines and cosmetics. Where even lemon grass and sábui grass cannot be grown on high and dry land, then plants such as palm, sal, piyal, Indian plum, kusum, palash, kheyer, and wild blackberry can be grown. If necessary, this sort of land can be used as pasture for cattle. If the

area of the high and dry land is quite large, along the borders we can grow banyan, sishu [Dalbergia sissoo Roxb.], oak and wild blackberry for both wood and medicine; African sweet berry for sugar and alcohol; and Indian olive (mahul) which is very useful for making honey, bread, alcohol, molasses, oil and tasty foods. If these trees are grown, on the one hard we can prevent soil erosion and retain the fertility of the soil, and on the other hand the land will develop the capacity to retain water.

The juice extracted from sweet potato can be used to produce sugar and raw sugar and the remaining pulp can be used in the paper industry. Sweet potatoes can also be grown on high and dry land, but the tubers will be small. Sweet potato is a three month crop and is harvested in Paośa, the first month of winter. People can make pancakes out of sweet potato, although they will not be very nutritious.

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Tapioca is nutritious. On all high and dry land cow pea can be grown. Lavender (keyá) can also be grown, and with some effort we can get good fibre crops. In Vaeshákha and Jyaeśtha the land is usually left fallow.

Cow pea stalks can be used for fencing, fuel and thatching. The empty pods can be used for fodder, and pulses can be prepared from the seeds. If high and dry land is used for cultivation, then it may be difficult to raise cattle for want of pasture land. High and dry land which can be ploughed should not be used for pasture land. In high and dry land all types of cattle can be reared. In Rárh the people mostly rear sheep, and in the month of Áshvina the sheep farmers of Rárh usually leave their homes with a flock of sheep and move to Madhya Pradesh in search of healthy grass. From acasia we get tasar silk and medicine, and from Indian plum we get tasar, lac, and wood for sports goods. Wild berry

(kathjam) can be used to prepare various types of medicines and non-mulberry silk. The berries can also give honey, but this honey is a bit hot. In olden times the kings of western Ráŕh used to plant sal, palm and pujasal.

Non-Agricultural Industries

Ráŕh has plenty of mica. Mica was formed about 1,000 million years ago. The Sanskrit name is abhra. It is readily available at Ánanda Nagar. In Jalpaiguri, Darjeeling, Coochbehar and Brahmanberia of Sylhet district – which is at present in Bangladesh – natural gas and oil are available. In other parts of Sylhet and the Khowai subdivision of Tripura, natural gas can also be found. There are large sulphur deposits stretching for eighty miles from Bakreswar to Nanur in Birbhum. The people of Birbhum, Purulia and Bankura are almost equally poor. Recently, after the Mayuraksi Dam was

constructed, there has been a slight improvement in the standard of living of the people of Birbhum.

Leprosy is a disease of malnourishment and poverty. Although the people of Birbhum, Purulia and Bankura are equally poor, there are many cases of leprosy in Bankura and Purulia and few cases in Birbhum because of the presence of sulphur deposits. Sulphur is a useful antidote for skin diseases. Sulphur can also be utilized as an ingredient for various medicines.

Iodine is also a useful ingredient for various medicines. A large amount of iodine can be easily processed from seaweed in the Digha coastal area. It can also be extracted from sea water. The term “seaweed” include many types of sea vegetation. In the coastal areas of Chittagong, many types of seaweed are available. In fact, in all the coastal areas of Bangalistan,

seaweeds with a high percentage of iodine are available. The best place to process iodine is Digha. Iodine and chlorine are marine products. Iodine can only be manufactured in South Bengal, not in North Bengal. Many people in North Bengal suffer from goitre, but in South Bengal the disease is almost eradicated. Borine can also be extracted from borax to make medicine. Borax can be found in the Bengali speaking area of Ranchi district.

In Ráŕh there can be prosperous aluminum factories in the belt from Jhalda to Angara. In the Bengali speaking areas of Ranchi district, there is a long bauxite belt. Ráŕh can easily develop profitable aluminium factories. It has more aluminium deposits than it needs to meet its own requirements.

In the areas close to the sea, canals can be constructed and filled with water. After a few

days the water will evaporate and a layer of salt will remain on the canal bed. In a number of places the salt industry can be established commercially in Bangalistan. The salt industry can thrive in Digha, Ramnagar, Mohanpur, Contai and Junput and, to some extent, on the Kutubdiya Island in Bangladesh.

Midnapore, 24 Parganas, Khulna, Bakharganj, Naokhali and Chittagong are all coastal districts. The climate of Midnapore is like that of western Rárh. In the summer season the hot winds start blowing over the land and the climate is dry, so water evaporates very fast. Obviously salt can be easily and profitably produced. The three main blocks of Midnapore district that have the greatest possibility of developing the salt industry because they are closest to the sea are Digha, Contai and Ramnagar.

6 June 1986, Calcutta

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Footnotes

(1) Páyrá phasal. A minor crop grown in the same field as a main crop. The seeds for a “pigeon crop” are sown by casting them in the same way that one might cast grain to pigeons. – Eds.

Farmers Cooperatives

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Providing food, clothing, housing, education and medical treatment is most important for social security. These five minimum requirements are indispensable to raise the living standard of the people. To guarantee these, the principle of production based on consumption has to be adopted. Special emphasis should be placed on agricultural production because the provision of food is of vital importance, and for this the cooperative system should be rapidly expanded.

According to PROUT, too many people should not be engaged in agriculture. Rather, a major part of the population should depend on industry. Not more than thirty to forty-five percent of the population should be employed in the agricultural sector.

Land is usually divided into economic holdings and uneconomic holdings, according to

productivity. Economic holdings are those where the market price of the produce will exceed the cost of production including capital, labour and machinery. Lands which produce economically viable agricultural wealth – that is, where output exceeds input – are called "economic holdings".

Uneconomic holdings are those where the market price of the produce is less than the cost of production after including the costs of all the inputs. As uneconomic holdings are not profitable, the landowners usually refrain from producing any crops. In the rural economy of a country such as India, if a village is accepted as a production unit, then there may be many plots of land in a village which are not used for producing crops because they are uneconomical.

While implementing PROUT, the question of agrarian revolution will automatically arise. As I

have already said, agricultural land should be brought under cooperative management, but the cooperative system should be introduced in two stages. In the first phase of the socialization of land, PROUT will not raise the demand for land ceilings, but the sale of agricultural land will be prohibited and uneconomic landholdings will be brought under cooperative management. The responsibility for cultivating this land will not lie with the landowners but with the cooperatives under the aegis of the immediate government, and with its assistance.

The landowners of the uneconomic landholdings in each village will become the members of the cooperatives in this phase. Thus, cooperatives will only consist of those who merged their land together to make uneconomic landholdings economic. The landowners will give their land, and in this phase they will remain the owners of the land. In cases where

the landowners employ labour for cultivation, fifty percent of the net profit will go to the landowners and fifty percent to the labourers who work in the cooperatives.

In this phase, the rivers and streams in a village should be harnessed for the collective welfare. For instance, by constructing embankments and small dams on the rivers, large-scale irrigation, electricity generation, and industries based on local needs should be established.

The first steps must also be taken to alleviate the population pressure on land. An increasing percent of the rural population will have to be employed in industry by establishing agrico-industries and agro-industries. There should be provision for the preservation of crops by building stores and cold-stores under the control of local administrative boards. The

cooperatives should be supplied with tractors, manure, seeds, water pumps and other farming equipment through producers cooperatives. Consumers cooperatives will supply the commodities necessary for daily consumption to the rural population.

In the very first phase of establishing cooperatives, agricultural labourers, landless labourers, day labourers and sharecroppers will come within the scope of cooperatives. From this phase, the education system in rural areas should be thoroughly reformed. To arouse the cooperative spirit among the people, there should be extensive training and education, but moral education must take precedence over everything else so that people do not give greater importance to individual interests at the expense of the collective interest.

In the second phase of implementing agricultural cooperatives, the economic holdings of the landowners should be brought under cooperative management. Only after all the uneconomic holdings in a village are brought within the scope of cooperatives should the economic holdings be brought under cooperative management. In this phase it will be easy to apply science and technology extensively in agriculture, increasing the amount of production.

In this second phase, all should be encouraged to join the cooperative system. The net profit will be increased in favour of the labourers working in the cooperatives so that twenty-five percent of the net profit will go to the landowners and seventy-five percent to the labourers. Here labourers means those who employ either their physical or psychic labour in the cooperative. The landowners will benefit in

two ways. First, as landowners, they will get twenty-five percent of the net profit of the produce from the land, and secondly, if they are part of the cooperative labour force, they will be entitled to a portion of the seventy-five percent of the profit distributed among the cooperative members.

In this phase, there must be emphasis on the rapid and large- scale establishment of agrico-industries and agro-industries so that the rural population will be dependent more on industry than on agriculture. With the development of such industries, there should be simultaneous emphasis on educational and cultural reforms to further develop the cooperative mentality of the rural population.

From this second phase, production for consumption will increase the standard of living of the rural population, and the basic criteria of

social security – that is, the minimum requirements of life – must be arranged for the people.

In the third phase, there should be rational distribution of land and redetermination of ownership. The rational distribution of land will depend on two factors – the minimum holding of land necessary to maintain a family, and the capacity of the farmer to utilize the land. In this phase, the landowners will not be able to employ individual labourers, landless labourers or sharecroppers for the cultivation of land, so it will be more beneficial for them to participate fully in the cooperative system.

In this phase, it will be easy to establish big cooperatives with the extensive application of science, but these cooperatives will not be anything like the huge collective farms of the Soviet Union or China. If cooperatives are

allowed to become extremely large, it will be difficult to utilize natural resources efficiently and this will lead to complications in the sphere of production. One of the main defects of the collective farms in socialist countries is their unmanageable size.

In PROUT, the farmers cooperatives themselves will determine the size of the cooperatives. But while building up the cooperative system, two factors should be kept in mind – first, the high quantity and quality of production should be ensured through the application of science and technology while keeping production costs at a minimum; and secondly, the cooperative members must be encouraged to attain maximum psychic and spiritual development at their highest level in exchange for their minimum physical labour.

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In the third phase of implementing the cooperative system, one hundred percent of the net profit will be distributed among the cooperative members. The former landowners will identify fully with the cooperatives in this phase.

Through these three phases it will be possible to reduce the excessive population pressure on land and to engage thirty to forty-five percent of the population in agriculture. In the second phase, the problem of unemployment will be tackled through the large-scale establishment of industry, and by the third phase there will be no unemployment problems for the agricultural labourers. By the end of the third phase, the rural sector will be freed from the vexing problems of agricultural and industrial production, unemployment and social security.

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In the fourth phase of implementing the cooperative system, there will be no conflict over the ownership of land. The agrarian problems of every village will be solved. All the social security arrangements concerned with food, clothing, housing, education and medical treatment will be easily provided to the people. In this phase it will be possible to make the maximum utilization of the collective physical, psychic and spiritual wealth of every village.

For the total implementation of the cooperative system, there must be proper psychic preparation through internal urge and external pressure, adjusting with the time factor, because people will never accept a system which is forcibly imposed on them. Such a change in the collective psychology will not occur overnight, but will depend on the sentiment of the people.

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The time period from the first phase to the fourth phase of the implementation of the cooperative system can be called the transitional period for the implementation of PROUT.

February 1982, Calcutta

Northeastern India

The northeastern region of India comprises Assam, Arunachala, Mizoram, Meghalay, Manipur and Nagaland. To the noith of India are the small states of Nepal, Bhutan and Sikkim.

The shape of Nepal is like a rectangle – the length from east to west is greater than the

width from north to south. Nepal is a multi-cultural country. Just as there is no particular ethnic group called “Indians”, similarly there is no particular ethnic group called “Nepalese”. The inhabitants of Nepal are of Austric-Mongolo-Negroid origin. There are a number of languages in Nepal including Nawari, Gorkhali, Angika, Bhojpurii, Rai, Lepcha, Sherpa, Bhutia, etc. The most important language in Nepal is Gorkhali. The inhabitants believe in different religions – some are Hindus who follow the Shaeva or Shakta cults, while others believe in a mixed religion of Hinduism and Buddhism. Large parts of southern Nepal are plains, but in the north are the Himalayas. In the west is the Terai and in the east, the Duars. Central Nepal is colloquially called “Madesha”. The inhabitants of Nepal have the same ethnic origin as those of India, and they introduce themselves as Madeshi. Generally the Nepalese people have pointed noses; only the Gorkhas have flat noses. The language of the

Morang district of Nepal is Angika, while Bhojpurii is the language of the westernmost part of Nepal. Bengali is spoken in Jhanpa district in the east. The Gorkhas are devoted to Shiva. One of the names of Shiva is "Gorakśanatha", and as the people are the devotees of Gorakśanatha, they are called "Gorkhas". The Gurung and Rai communities have mixed ethnic origins – their forefathers were Indians and their foremothers were Mongolians. They are Mahayanii Buddhists by faith and they eat beef. The Gorkhas eat raw buffalo meat. The Joshi Brahmins who live in the hilly regions are Pashchimá Brahmins – that is, Brahmins from western India – and they usually use the surname Upadhyaya. The Lamas who settled in Nepal are of Tibetan origin. The central part of Nepal – that is, the plains – is called the Kathmandu Valley. It is inhabited by the Newars who are tall and follow the Hindu religion. The other inhabitants of Nepal are the

Sherpas, Lumbus, Lepchas, Bhutias and Tibetans. The people of Bengali origin are settled in Jhanpa district. The languages of the regions other than Jhanpa district arc of the Indo-Tibetan group. The oldest script of Nepal is Bengali. Up to 1773, the Newars were the rulers of Nepal, and the royal language was Newari written in Bengali script. In 1773 the Gorkha leader Prithvi Narayan Shah forcibly occupied Nepal on the festive day of Dolyatra. Thcre is no such language as Nepali. In fact, as many as 17 languages are spoken by the inhabitants of Nepal and Gorkhali is one of them. About 100 years later, the British general Octonloney occupied Nepal. A truce between Nepal and Great Britain was signed at Sugaoli which became known as the “Treaty of Sugaoli”. According to this treaty, the British army would include a Gorkha regiment in its ranks; the inhabitants of Nepal would be paid in Indian currency at Motihari near the Nepalese border;

there would be no passport or visa system between Nepal and India; and there would be tree trade between the two countries.

Bhutan is located to the north of Bengal and to the east of Nepal. Both the inhabitants and language of Bhutan are called “Bhutia.” The language is of the Indo-Tibetan group. The people follow the Buddhist religion. Bhutan was also a British colony, and British currency was once prevalent there, but now Bhutan is a sovereign state.

To the north of Bengal, and to the east of Nepal and to the west of Bhutan, is Sikkim. Its inhabitants are Lepchas and Bhutias. Their religion is Mahayajani or Lama Buddhism.

To the east of Nepal is NEFA – North East Frontier Agency – which is now known as Arunachala. Its old name was “Baliapaŕá” This

small state of India is situated next to China. The inhabitants speak Assamese and Bengali and follow the Buddhist religion. Christian missionaries converted a small portion of the population to Christianity. After independence the area was renamed Arunachala, and it enjoys the status of a B-class state (that is, a small state) in the Indian constitution.

The original inhabitants of Darjeeling were Lepchas and Bhutias. The British developed Darjeeling as a hill town. Darjeeling district is similar in size to the Garbeta block of Midnapore district in Bengal. Tea, maize, the large variety of cardamon and oranges are grown in abundance here, but there are no particular mineral resources. Agricultural produce is exported from Darjeeling. In Darjeeling district there were about 300,000 Nepalese – that is, Lepchas and Bhutias. About 200,000 of these were permitted to settle in India after being driven out of other

areas. Some Nepalese settled in Darjeeling district and some cleared the jungles in Madarihat in Jalpaguri district and settled there. Amongst the Nepalese who were allowed to settle in India, some were Gorkhas. Those who settled in Darjeeling district are divided into two distinct groups – Nepalese and non-Nepalese – and amongst the Nepalese there are Gorkhas and non-Gorkhas. So in fact there are very few Gorkhas in Darjeeling district.

The Cachar, Goalpara, Dhubri, Nagaon and Kamrup districts are the Bengali speaking districts of Assam. The British occupied Assam in 1824 and later separated it from Bengal Presidency in 1912. The inhabitants of Cachar district were originally Bengalees. The king of this area was Shiva Singha and the capital of his kingdom was Haflong. The British occupied Cachar after defeating him. The areas of Goalpara, Coochbihar, Sitai, Dinhata,

Mathabhanga and Shitalkuchi formerly constituted Rangpur sub-division. Before the British occupied this region, it was included within the Coochbihar Native State. Later Goalpara was separated and the remaining portion was known as the British Rangpur sub-division. Goalpara was made a separate district with its headquarters at Dhubri. The northern part of Dhubri is adjacent to Bhutan and the inhabitants are mainly Rajbangshi Bengalees who speak the Rangpuri dialect of Bengali. In the census reports their mother tongue is wrongly recorded as Assamese. The northern part of Nagoan district is full of forests and jungles, and the southern part is hilly and also full of forests which are inhabited by elephants. Most of the population are Bengalees who speak Bengali. Only a small number of people speak Assamese, and most of these people use surnames such as Mandal, Bhunya, etc. In Hojai, Lanka and Lumding all the people are Bengalees.

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The headquarters of the Kamrup district is Gwahati which is also the capital of Assam. The people are mostly Assamese. Some of the sub-divisions like Nalbari, Barpeta, Haoli, etc. are full of forests and are the Bengali speaking areas. Some parts of Barpeta district are entirely Bengali speaking, but the number of Bengali Muslims is more than the number of Bengali Hindus.

Meghalay comprises the Garo Hills, United Khasia and Jayantia Hills and the Tribal Council. Kumuda Ranjan Singha was the king of the old Meghalay state. The inhabitants are Garos, Khasiyas and Bengalees. The Bengalees outnumber the rest of the population. Shillong is predominantly a Bengali city.

The royal family of Manipur used to speak Bengali. The kings of the Tripura and Manipur

were initiated by Chaitanya Mahaprabhu. The inhabitants of Manipur follow the Gaoriya Vaeshnava religion, and their main scripture is Chaitanya Charitamrita written in Bangali. The capital is Imphal and the language is Mithei Manipuri written in Bengali script. The army of Manipur was chiefly manned by the Kukis.

Amongst the different ethnic groups of the northeastern region of India, an atmosphere of cordiality and fraternity has to be developed. Amongst the Bangali Hindus and Bangali Muslims, cordial ties must also be well-established. All kinds of social, economic, cultural and educational activities must be accelerated. This work should continue with a lot of intelligence and tact. Movements and agitations against the exploitation and deprivation of the local people must be launched immediately, and the Bengali speaking areas must be brought within the purview of the

Bangalistan movement. The future of the entire northeastern region of India is very bright.

In North Bengal, the Assam Valley, Karimganj, Silchar and Cachar the topography, soil and climate are quite different from those of Rárh. Rárh is about 300 million years old and at that time these places were under water. When the Himalayas came into existence, they were under water. After the formation of the Himalayas, they rose up out of the sea and were built up with the accumulated sand and silt from the Himalayas. All these places did not come into existence at the same time, which is why we can see three areas with distinct types of soil in North Bengal. One is diyára, river side alluvial soil; the second is ťál, large strips of plain alluvial soil; and the third is barren or sandy soil. The hills of Rárh are higher than those of the Khasia and Jayantia Hills. As a result of constant erosion for 300 million years, the mountains of Rárh have

become small hills. In ancient times the rivers of Rárh were ice fed, but now they are rain fed. Like Rárh, the rivers of Tripura are rain fed, but the duration of the rains in Tripura is longer than in Rárh. As a result, for most of the year the rivers remain full of water. Hydroelectric plants for industrial development can be easily established in Tripura. If the government wants to generate cheap electricity in Tripura, North Bengal and the Assam Valley, hydroelectricity is the most suitable source of power. In comparison, the cost of solar energy will be greater. In this vast area there are many large rivers like the Mahananda, Balasai, Tista, Buritista, Jaldhaka, Godadhi, Brahmaputra, Barak, Kushiyara, Gomati and Pheni. From these rivers it is quite easy to produce much hydro-electricity. The soil in this region is slightly sandy, but the soil in Rárh is sticky. Sticky sandy soil is ideal for jute, pulses and other summer crops. Good summer crops include Bengal gram,

horse gram, pea, etc. The rivers of North Bengal carry a large amount of alluvial soil, and the soil of this region is very soft. So while constructing dams, a strong concrete foundation must be built. The Koshi river has changed its course about 100 times in the last 135 years because of the soft soil in the area. It is essential that the foundations and sides of all the dams constructed in this region are made with concrete so that the dams will last a long time.

This is also a jute producing area. From jute, industries such as nylon, rayon, match sticks, plastic and jute's wool can be developed. High quality warm clothing can also be produced by manufacturing nylon and wool. In all these areas jute spinning mills can be developed. To establish cotton spinning mills in Rárh, vapourisation will have to be artificially produced in factories, but in North Bengal the local climate is very congenial to fibre

production, so artificial vapourisation is not necessary for spinning jute. In North Bengal custard seeds, drumsticks and mulberry plants are plentiful, hence there can also be abundant silk production. This area – except Balurghat, Raiganj and the northern portion of Malda – is full of alkaline soil which is ideal for mangoes and lichiis. Pineapples and bananas can also be grown in abundance. Jalpaguri, Coochbihar, Dhubri, Karimganj, Cachar, the Assam Valley, Silchar and Tripura are ideal for the cultivation of jackfruit. From banana, pineapple and jackfruit good quality fibre can be manufactured for the cloth industry. For the cultivation of pineapple and bananas, a humid climate is required, but jackfruit requires no particular climate – it can grow in all climates and soils. The climate of Tripura is extremely congenial for jackfruit. Besides fine fibre, alcohol can also be prepared from jackfruit in Tripura and alcohol related industries, pharmaceuticals and

medicines can be developed. High quality sugar can also be prepared from jackfruit. In the Terai area where there is heavy rainfall, oranges can grow in abundance, therefore medicinal industries from fermented orange juice can also be set up. In Jalpaguri bran oil can be produced from paddy husks, and if it is mixed with limestone, large scale cement industries can also be established. In Darjeeling and the Assam Valley there are rich deposits of copper. In Cachar, Karimganj and Tripura soft wild bamboo is plentiful which can be used as a raw material for the paper, plastic and rayon industres. A new type of alternative food can be extracted from the green leaves of the bamboo plant. Fine fibre can be produced from pineapple leaves.

If dams are constructed on the rivers, artificial canals can be built and used as water transportation routes for power boats. On both sides of the roads segum, mahoganv and shal

trees can be planted. The local climate is very congenial for the rapid growth of these types of trees which can be utilized for the production of non-mulberry silk. To establish industries in this region, hydro-electricity can be easily produced. Electricity can also be produced from solar energy, but it will be more expensive. In Raiganj, Balurghat and North Malda, aus paddy will grow abundantly. North Cachar, Mikar Hills and Lumding have the same sort of problems as Tripura. The Meghalay rivers are partly ice fed and partly rain fed. This area receives heavy rainfall, so it is advantageous to produce hydro-electricity. The soil is not very fertile, so food crops do not grow well. Sugar cane can be grown profitably, so the paper and sugar industries can also be developed. The Meghalay Hills are similar to those of Tripura, and the plains are like North Bengal.

In the regions where there is heavy rainfall, mango and lichii can grow, but in certain places they will be infested with worms. The best mangoes and lichiis in India are grown in this region. The more one proceeds towards the coast, the more humid the climate becomes, and such a climate is ideal for growing pineapple, banana and betel nut. In English supari means “areca nut” but in Indian English it is “betel nut”. Betel is a Tamil word which means music. The more one proceeds towards the west, the drier the climate becomes. Such a climate is not ideal for banana, pineapple, etc. In Mithila in Bihar, no pineapple or banana is grown.

Northeastern India has immense socio-econimic potential. This potential should be properly harnessed for the collective welfare of all the inhabitants.

20 April 1989, Calcutta

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South Bengal

The ancient name for South Bengal is “Samatat”. The land is close to the sea. In colloquial Bengali, Samatat is called Bágri. On the east of Samatat is Banga Dabak, on the west is East Rárh, on the north is Barendrabhum and on the south is the Bay of Bengal. That is, South Bengal comprises the eastern portion of

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Murshidabad, and Kusthia, Nadia, 24 Parganas, Calcutta, Jessore, Khulna, Barishal, Faridpur and Patuakhali districts. On the west of South Bengal flows the Bhagirathi River, on the north the Ganges and Padma Rivers, and on the east the Padma and Jamuna Rivers. These rivers form a triangle.

The land of Samatat has been built by the alluvial soil and silt of the Ganges, Bhagirathi and Padma, and is much more recent than the soil of Rárh. The soil of Rárh is 300 million years old, whereas the soil of Samatat is only 10,000 to 15,000 years old. No relic or evidence of anything older than 8,000 years can be discovered in Samatat. The area known as the Sundarbans is still more recent. The soil of Samatat is very moist and fertile.

The climate of Samatat is humid, so the inhabitants cannot labour hard. For much of the

year there is rainfall. The people have had to survive against extreme heat and heavy rain, so they have developed fighting spirit. As the land of Samatat was built with silt and alluvial soil, and with some portions which rose up from the sea bed, no mineral resources can be found. In olden times, Samatat was very famous for pearls and sea products. The merchants of Bengal used to trade in pearls which were in great demand in places such as China, Rome, Egypt and Mesopotamia.

The civilization of Samatat started about 8,000 years ago. About 700 years ago, during the early part of the Pathan rule, there was a devastating cyclone which submerged Samatat. The sea water rose about twenty feet and destroyed everything for 200 miles inland. Whatever existed within this radius – towns, cities, villages, trees, plants, animals, human beings – was totally destroyed. When the water

receded, there were no living beings in the area. After some time new grass, shrubs, plants and trees began to grow. The people of Rárh went to Samatat with their implements, established settlements, and began farming the vast tracts of uninhabited land. New plants and trees created thick foliage and vast forests – the present Sundarbans. The people of Rárh cleared parts of this forest area and built villages.

The geographical features and environment of Samatat changed radically following this catastrophic cyclone, and the soil, particularly in the southern portion of 24 Parganas, became saline. The air, water and environment of Samatat also became saline. Crops do not grow well in saline soil; in fact, saline soil is almost unfit for agriculture. Mud and brick houses decay quickly due to the corrosive effect of the salinity. The saline water is useless for irrigation. The farmers of South Bengal only

harvest one poor crop a year, and that with great difficulty. Due to the saline weather, the people of Samatat suffer from stomach trouble throughout the year. There are no good prospects for agriculture, trade or commerce. Once there were some medium-scale cottage industries, but these are gradually disappearing. Over and above this miserable economic condition, there is severe psycho-economic exploitation.

At one time the people of Samatat enjoyed fifty percent of Bengal's fortune and glory. The ancient Roman historians described Bengal as Ganga-Ridi [the land between the Ganges River and Rárh]. Samatat made a major contribution to Bengal's legacy, because it embodied the fighting spirit of the Bengalees. In every age the people of Samatat used to bear the brunt of foreign invasion. Foreign invaders used to enter Bengal along the South Bengal coast. The glory,

natural beauty and economic prosperity of Samatat used to attract foreign visitors, but now the same region is in an extremely precarious condition because of its saline environment and the severe economic exploitation. Today South Bengal must be built anew.

About 4,000 years ago there was a valiant king in Samatat called Sagar, who had an equally valiant navy. He was the supreme commander of the navy, which patrolled the Bay of Bengal. His son, Bhagirath, was a civil engineer who excavated a canal from Malda south to the Bay of Bengal to facilitate improved agriculture in East Ráŕh and the southern portion of Bengal. This canal has now taken the form of the river Bhagirathi. In old Bengali rhymes the Bhagirathi was called “Bhaga’s Canal”. The Bay of Bengal was called “Ságara”.

The greatest curse of Samatat is its salinity, which is why this region is called “Saline Bengal”. Suitable steps have to be taken to save South Bengal from the detrimental influence of salinity. First, the soil has to be made free from salinity, and for that sweet water has to be brought from the rivers of Rárh, such as the Suvarnareka, Kangsavati, Damodar, Ajaya, Mayuraksi and Rupnarayana. The sweet water should be channelled through huge underground pipes so that the ponds, tanks, canals, rivers and rivulets will again be supplied with sweet water. At present, the rivers of Samatat are extremely saline. All the rivers should be filled with sweet water except those parts near the confluence of the Bay of Bengal.

Once the soil gets back its natural composition and is free from salinity, it will be easy to produce four paddy crops in a year and various other cash crops. Moreover, when the

soil and water are desalinated, the degree of salinity in the air will also decline considerably. This will provide a congenial environment for improved agriculture, trade and commerce, and industrial development.

The amount of power needed to supply the industrial centres can be derived from the ebb and flow of the tides in the Bay of Bengal. Small-scale cottage industries can be started in every home in South Bengal so that even the women of the farming families can take part in industry. This approach will go a long way toward solving the widespread unemployment problem. South Bengal must be self-sufficient in power production, and windmills can also be used as a supplementary source of power generation.

The very survival of South Bengal depends upon its freedom from salinity. Most of the rivers and canals are now silted and reduced to

stagnant reservoirs. They have to be reclaimed, and a proper drainage system must be built. At one time South Bengal was famous for its shipbuilding industry and there were a number of shipbuilding yards. Even 150 years ago large ships were built from these centres.

Another profitable industry in South Bengal was the salt industry. Salt production in the past used to meet the demands of all India, and the surplus was exported. The British systematically destroyed the salt industry, and as a result about 500,000 people were deprived of their traditional means of livelihood. To reorganize the economy of South Bengal, the salt industry should be rebuilt. Since olden days Samatat has experienced a series of political misfortunes, but the people of this region must once again rise up and overcome all obstacles.

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In the coastal areas of South Bengal there are various types of seaweed which are useful for the pharmaceutical industry. Through the development of agro-industries and agrico-industries, the local population can solve their unemployment problems, while cottage industries, small-scale industries and cooperative enterprises can provide income to the poor. Once the soil, water and air are made free from the pernicious effects of salinity, the people will get back their vitality. They will enjoy a new lease of life and experience better health, greater longevity and a higher standard of living.

20 April 1989, Calcutta

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Contai Basin Planning

The Contai Basin is the area between the Rasulpor and Suvarnareka Rivers where they are about to merge in the Bay of Bengal. The Bengali name of Contai is Kán̂thi derived from the Sanskrit word kan̂thiká. The British changed Kán̂thi to Contai because to them Kánthi

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sounded similar to Kandi in Murshidabad district and Kanthi in Midnapore district.

In the Contai Basin there are numerous natural resources which can be the basis for various large-scale, medium-scale and small-scale industries in the planned development of the area. Nature has generously allocated her resources to almost all the regions of the world – on land, in water, in space, in the deserts, in the mountains, in the dense forests and on the bottom of the sea. Nowhere has nature been miserly in bestowing her wealth. By applying human intellect, wisdom, enterprise, mutual cooperation and commercial acumen, these natural resources can be fully utilized, and each region of the world can be developed agriculturally, industrially and commercially into viable self-sufficient socio-economic units.

Planning for the economic development of the Contai Basin should be included within the framework of block-level planning. If this approach is adopted it will ensure integrated, balanced and multi-purpose developmental planning. Unfortunately, no government has so far taken a constructive approach to the socio-economic problems of the region or bothered to assess the actual amount of natural resources and economic potentialities in the Contai Basin. Economic planning must identify the particular problems of the Contai Basin and utilize the natural resources of the region to solve them.

Cyclones

Of all the problems affecting the area, the worst is the frequent occurrence of cyclones. The Contai Basin is a low lying area along the coastal belt of South Bengal. About 200 to 300 miles out to sea depressions often form in the

Bay of Bengal. As a result the human beings, animals, buildings, agriculture and natural environment of this area are regularly subjected to violent cyclones which cause untold loss of life and property. To control the fury of nature, there must be extensive afforestation in a strip one mile wide along the entire coast. In this strip trees such as shishu [Dalbergia sissoo Roxb.], cashew nut, jackfruit and hoop pine should be grown. These varieties of trees will create an artificial forest which will function as a natural wall to keep the powerful cyclonic winds and the destructive force of nature from wreaking havoc in the region.

A new kind of afforestation programme must be developed for this purpose. Such a programme will yield a number of benefits – the cyclones will be resisted; the loss of agricultural land will be minimized; new forest resources will flourish; regular rainfall will increase; the

production of cash crops such as cashew nut and jackfruit will develop; and the purchasing power of the people will be enhanced. If a village or settlement already exists within the coastal strip, it should not be destroyed. Rather, the afforestation should be done all around it and continued along the coast. If the pine trees are planted close together, the pores of the leaves will attract the rain clouds, and as a result there will be a profound beneficial change in the climate of the region.

The afforested strip will also greatly assist the prevention of soil erosion along the coast. In rural Bengal large-scale soil erosion is called khoyái. The pine trees spread an extensive network of roots under the earth, compacting the soil particles and binding them tightly together.

Besides afforestation there should also be large-scale cultivation along the coastal sand dunes of all varieties of melon, such as musk melon, deer melon and watermelon; and gourd, such as squat gourd. These creepers will spread out across the surface of the dunes, hence soil erosion will be prevented. (Melons grow best during the summer, the worst season for cyclones.) If sand dunes are kept uncovered, the winds from the ocean will blow the sand away and erode the coast line, reducing the area of land and encouraging the encroachment of the sea.

Marine Industries

In the Contai Basin there is enormous potential for large-scale marine industries. For example, the cultured pearl, salt, iodine, phosphorus, oyster, conch shell and seaweed industries can all be developed.

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Cultured pearls can be grown along the Contai Basin coast and sold in both the national and international markets, earning a lot of revenue. Other pearl based industries can also be established. This kind of enterprise will strengthen the rural economy of an undeveloped area. The cultured pearl industry brought prosperity to the fishermen along the coast of Japan. The Contai Basin has enormous potential for developing cultured pearls.

Within the one mile wide afforested coastal strip, salt manufacturing units may be established at various places. Salt tanks may also be constructed at different points along the coast. This industry will create direct and indirect employment for hundreds of families, and the chronic unemployment problem of the Contai Basin will be alleviated to some extent. If the salt industry is developed, West Bengal will

not have to depend upon Gujarat, Maharashtra or South India for its supply of salt. This will also help check the outflow of capital from West Bengal, so the state will experience overall growth.

In the Bay of Bengal along the coastal area of the Contai Basin there are many types of seaweed, which can supply iodine, phosphorus, potassium, sodium, sodium chloride and other valuable chemicals. On the basis of these chemicals, a number of chemical industries can be established in the region. Due to the abundance of iodine, pharmaceutical industries can also be developed.

Along the Contai seashore various types of beautiful oysters and conch shells are available, which can be utilized to make ornaments, house decorations, handicrafts and a variety of other products.

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In the sea along the Contai Basin many types of seaweed and aquatic plants grow which can be used to produce various medicines and protein rich foods. Seaweed processing factories can be built at various places along the coast. Most seaweeds belong to the grass family of plants, and vegetarians can eat the protein from seaweeds of this group. However, if the protein

collected from a particular variety of seaweed causes an allergy in a person, then the protein of that variety of seaweed should be considered static for that person. Pharmaceutical industries can be established to produce protein foods and protein tablets which can be used as both food and medicine.

Cash Crops

Cash crops such as coconut, squat gourd, melons of all varieties, cashew nut, jackfruit,

chiku, betel nut, betel leaf and banana can be grown in abundance.

The soil of the southern and southeast portion of Midnapore district is saline, which is why coconut grows very well there. Large quantities of coconuts can be grown in the adjoining area of Contai for the same reason. The hybrid variety of coconut from Kerala produces fruits within only five years and can grow abundantly in the Contai Basin. The leaves can be used as fuel and the small branches as broom sticks. The kernels can be pressed to produce oil, thus the coconut oil industry can be profitably developed. Coconut oil can be used as both a hair oil and as an edible oil. A network of small-scale or cooperative coconut industries can be established in the Contai Basin to supply coconut oil throughout West Bengal and the northeastern states of India. Even the shell of the coconut can be used to produce various

commodities. Thus, in every village there is the potentiality to develop cottage industries.

Coconut milk can be bottled and sold in distant places as a cold drink, coconut pulp can be used in the sweet industry, and the trunk of the coconut tree can be used in the house building industry. Coconut husks are used in the mat and window screen industries, dehydrated coconuts are used in ayurvedic medicines, while in Bengal there is a large market for coconut delicacies. These industries can also create a lot of income for the local people. In fact if coconuts are grown on a large scale in the Contai Basin, the local economy will be transformed automatically, and the standard of living of the people will be greatly increased.

The beach in the Contai-Junput-Digha region is very wide, so it is easy to grow squat gourd and melons profitably beside the seashore.

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Where the land does not become submerged by sea water, poor farmers can improve their economic condition by cultivating squat gourd throughout the year. Melons can also grow in abundance. In hot countries like India, melons are in great demand. Melons and squat gourd are some of the popular cash crops of the area.

Cashew nuts are also a very profitable cash crop in India and abroad. The soil and weather of the Contai Basin is quite congenial for cashew nuts. Through the application of modern agricultural science, the quality of the cashew nut harvest can be greatly increased. Cashew nuts can be fried and packed or eaten raw, while cashew nut powder can be used to make sweets. The local farmers can earn a good livelihood by utilizing this valuable cash crop in various ways.

Jackfruit is also a very lucrative cash crop. Jackfruit is very nutritious, so villagers can eat

the raw fruit to improve their health, and the juice can be canned or bottled and sold in the market at profitable rates. Dried jackfruit seeds can be used as an alternative to potatoes. Potatoes have been in use in Bengal and India for the last few hundred years, but prior to that the people of Bengal used jackfruit seeds as vegetables. The food value of jackfruit juice and seeds is very high.

The soil and weather of the Contai Basin is very congenial for chiku. Chikus will grow abundantly along the coast as far as the salty sea air travels inland, but beyond that distance the fruits will not grow so well. Chiku is a nutritious, tasty and popular cash crop.

Besides these crops, abundant betel or areca nut, betel leaf and bananas can be grown in the Contai Basin. All these are profitable cash crops.

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Infastructure

Digha is the widest sea beach in the world. At some points the beach is two miles wide. Together with the creation of a forest along the Digha sea coast, a well-made road and a railway line should be constructed parallel to the seashore. If this is done, Digha will develop into an ideal resort for tourists from Bengal and other states of India. People from other countries will also visit Digha to enjoy the natural sea beach. If good hotels, healthy drinking water, the Danton-Digha railway line and cultural centres are arranged, Digha can become an extremely popular and attractive sea resort. This development will virtually eradicate the poverty of the people. Many new food stalls, vegetable markets and transport facilities will provide job opportunities for the local people.

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A small distance from Digha an ideal port can be built at Bhograi at the confluence of the Suvarnareka River and the Bay of Bengal. The future of the Haldia Port is not very bright, so if a new port is established in the mouth of the Suvarnareka River, another large commercial centre can be added to the map of Bengal. All the commodities which are imported and exported through the Calcutta and Haldia Ports can also pass through this port, as well as all the agricultural produce, coconut, betel leaf, areca nut, melon, squat gourd, banana, etc., that can be grown in the Contai Basin. Once the port is developed, various new export industries can also be established in the Contai Basin area. The people of Contai will no longer rush to Calcutta, Durgapur, Tatanagar or Bombay in search of employment. In fact, if this port is constructed, the entire Contai Basin as well as the southern portion of Midnapore district will undergo an economic revolution.

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The Howrah-Danton-Digha railway should also be constructed immediately. In the Contai subdivision there is no railway line. For the speedy development of this area, there must be a railway line between Danton and Digha, then passengers from Calcutta can travel directly to Digha. Once this railway line is established, the progress of the Contai Basin will be accelerated, facilitating the development of industry, trade and commerce throughout the subdivision. The Danton-Digha railway will be the lifeline of the Contai subdivision. In fact, if the railway line is extended to Bhograi along the coast, then the trade, commerce and industry of the entire region will rapidly develop. For railway tourists, this area will become an attractive tourist resort.

Cooperatives

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It is unfortunate that in the Contai Basin, which has abundant natural resources and enormous economic potential, no industries other than mat-making and weaving exist. During the last forty years, both the Congress and Left Front governments have proved to be totally negligent and incompetent, and both have failed to develop the economic potential of the Contai Basin. Today even the traditional mat-making and weaving industries are on the verge of collapse due to lack of capital.

The mat-makers should be encouraged to produce mat sticks on a cooperative basis through the provision of low interest loans, and proper marketing arrangements should be made so that they can sell their finished products throughout India. Their mats can also be sold to other countries which have warm climates. If this is done the poor mat-makers will earn a

decent living. Ninety percent of Bengal's mats are now produced in Midnapore district.

Likewise, the weavers of the Contai Basin should be trained to use power looms instead of outdated handlooms; then they will be able to compete with modern, large-scale weaving enterprises. The government should have encouraged the formation of weavers cooperatives, but nothing has been done so far in this regard. Handlooms should only be used to make special items such as clothing adorned with high quality embroidery, but for all other items, the weaving industry will have to conform to modern standards and preferences. If the mat-makers and weavers are properly organized and these industries are modernized and developed, thousands of families will benefit economically.

One of the sources of income for the fishermen of the Contai Basin is dried fish, which is exported to different markets in India and Bangladesh. The fish are usually dried in the open, so the bodies rot, creating a foul smell. This pollutes the atmosphere, and as a consequence negative microvita attack the coastal area.

From the viewpoint of public health and welfare, this type of fish production cannot be supported. With the help of modern technology, dehydration plants should be built to dry the fish scientifically so that no foul smell is created in the atmosphere. Both cooperative bodies and the government will have to come forward to establish such factories.

According to the principles of psycho-economy, static food production should not be encouraged, but considering the traditional

habits and psychology of the people, the system of producing dried fish should not be stopped immediately unless alternative sources of livelihood are arranged for the fishermen. But because of the importance of public health, and the air pollution, the production of dried fish which has a foul smell should be stopped as soon as possible.

June 1988, Calcutta

The end

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