

~~Chapter : II~~

~~AGRICULTURE~~

After 74 years

Rajaram in his speech on 3rd April 1929 said

" Agriculture is the broad foundation on which our economic life is based."¹ It is this important aspects of the economic life that is intended to be introduced in the chapter. Land in its relationship with man during the period of the study needs careful study.

Classification of Land :

Land in Kolhapur state was divided according to the colour and fertility of the soil. Generally and ^{1(a)} was divided into black, red, malai and khari or pandhar. It was also divided according to fertility of soil viz. superior, middle and inferior. While the soil in Alte, Karvir, Shirol and Radhanagari was red, black soil in Karvir, Shirol and Bavada. The land on the bank of river was usually called malai. Land also classified in Bagayat, Jirayat and Tari.

Crops :

Crops were produced by the cultivators into two seasons Kharip and Rabbi. Jawari, bajari, wheat, and rice were the main crops. Mug, udid, tur, gram, kulith, peas, beens and vatana were the pulses raised by the cultivators. Tobacco, Sugarcane, cotton and turmeric were the cash crops. Oil-seeds such as groundnut, karadi, yerandi, seasum and also ragi, varai, sava and chillies were raised."²

In the talukas of Alte, Karvir, Radhanagari, vari, nagali paddy, and bajari produced. Jawari, bajari, groundnut,

wheat, cotton, tobacco were produced in the talukas of Karvir, Hatkanagale, Shirol, Gadhinglaj and some parts of Raibag. Generally Jawari, bajari, rice, nagali, tur, gram, sugarcane and cotton were largely produced by the cultivators."³ Moreover, vegetables and fruits were also raised in the various talukas, of the State.

Season and Crops :

The monsoon broke out in June 1922-23"⁴ in time and kharip crops were raised fairly well. Rabbi crops were sown in all parts. The rabbi crops were sown in some parts due to the failure of the rain in almost all parts of the state and so both rabbi and kharip crops suffered in 1923-24."⁵ In 1924-25 rabbi and kharip crops were fairly well and the condition of the crops was fairly satisfactory."⁶ The villages of Shirol Petha and Raibag Mahal suffered due to shortage of rain. The rayat of some villages requested to HIS HIGHNESS RAJARAM for postponement of the collection of the assessment."⁷ The request was accepted by the Chhatrapati in 1925-26. The condition of crops in the remaining parts of the state was fairly well."⁸ In 1927-28 rainfall was well distributed in all parts of the Kolhapur state. Kharip and rabbi crops therefore were grown well after some five years."⁹ Though the monsoon came late, the rain was well distributed all over the state. In the eastern part of the state standing crops suffered due to want of rain and sowing operation of rabbi crops was stopped. The crops in the western part of the state

were in good condition."¹⁰

In 1929-30 the crops of kharip and rabbi were fairly good."¹¹ Similarly the monsoon broke out in time and rain was well distributed all over the state."¹² Due to the absence of rain, there was some anxiety in Shirol taluka, Raibag and Katkol mahal but it was soon relieved."¹³ Totally the harvest was good over all the parts of Kolhapur state. In 1932-33"¹⁴ general economic condition of the agriculturists was not satisfactory though the rain was well spread over all part of the Kolhapur State. The crops of Kharip and rabbi were satisfactory but sugarcane suffered due to the lack of rain in 1934-35."¹⁵ In 1935-36 monsoon came late so it was not beneficial to the crops. The sowing of kharip crops could not be completed satisfactory, and therefore harvest was insufficient."¹⁶ Owing to the absence of April storms, the sugarcane suffered. On the whole condition of the agriculturist was not quite satisfactory."¹⁷ The rain came in time and the production of kharip and rabbi crops well developed "¹⁸ in 1937-38. In the year 1938-39"¹⁹ sowing operations of kharip and rabbi crops were completed in season. The rain was sufficient for crops over all the state of Kolhapur. Due to diseases the rice crop "²⁰ suffered much in Radhanagari and Bhudargad talukas and Shahuwadi Mahal in 1939-40.

Area Under Principal Crops :

Various agricultural products are mentioned in our records. It is essential to study the area of various principal

crops under cultivation. A careful analysis of the table showing the land and the principal crops clearly shows certain trends of cultivation in the Kolhapur State from 1922 to 1940. Except gram and groundnut the area under the crops mentioned in the table diminished. In case of jawari and bajari the reduction in the acreage was fifty percent over the initial year. In case of paddy the reduction is small, but in case wheat the reduction in the area is quite significant i.e. about twenty five per cent. The highest area under sugarcane was sixty eight thousand two hundred forty four acres in 1933-34²¹ while the lowest namely one thousand five hundred seventy seven acres was in 1928-29.²² Even tobacco and cotton shown downward trend. In case of groundnut only there is constant increase in the area.

Survey and Settlement :

On 19th June 1928 Rajaram opened the survey and settlement department, for the Shirol taluka. The survey and settlement department was under the control of the Chief revenue Officer and Mr.D.B.Mali was the survey and settlement Officer."²³ In 1928 old boundaries of land were checked and corrected with the help of sixteen measurers and two Nimtandars. There were nineteen villages served by the Officers."²⁴ In 1929-30 two thousand four hundred thirty five survey numbers were checked."²⁵

In 1930-31 Nimtandar finished the work of measuring the land and survey of Hatkanangale and Shirol taluka. " 2



The survey and settlement officer inspected the work done by surveyors and Nimtandars.²⁷ In 1930-31, 1931-32 and 1932-33 eight hundred fourteen, three thousand six hundred forty four and Seven thousand seven hundred forty six survey numbers were measured respectively.²⁸ The work of survey and measuring the land in Shirol and Hatkanagale talukas were completed in 1935.²⁹ In 1935-36, twenty surveyors finished work of measurement in nine villages in Radhanagari and three villages in Bhudargad taluka. Mr.D.B. Mali visited nine villages and inspected the land.³⁰ The measurement work was done as tabulated below :

TABLE NO.2

Name of Taluka	Measurement work completed		Classification work completed	
	Survey Numbers	Plot Numbers	Survey Numbers	Plot Numbers
Radhanagari	1,484	1,632	483	432
Bhudargad	278	219	--	--
Total	1,762	1,761	483	432

The work of original survey was completed in 1935-36 by

the Superintendent of land record C.D.Poona³¹ with the help of one Nimtandar, eleven surveyors and one clerk. There was the practice of revising the survey and settlement for example the , second revision of Gadhinglaj and Panhala taluka was completed by the Officers in 1935-36."³² Survey officers visited some villages of above mentioned talukas and inspected the work which was done by the surveyors and Nimtandars. The work done by Officers can be tabulated as follows."³³

TABLE NO.3

Name of the Taluka	Number of Survey numbers of which the old boundaries settled.	Number of sub-division measured.
Gadhinglaj	4,933	15,639
Panhala	1,926	6,886
Total	6,859	22,525

In 1936-37 the work of measurement in various talukas was completed. The survey and settlement officers visited and inspected various villages. In this year Radhanagari, Bhudargad, Gadhinglaj, Karvir, Shirol, Shahuwadi and Katkol taluka were measured by the Officers. The following table shows the measurement work."³⁴

TABLE No. 4 .

Name of taluka	Measurement work completed.		Classification of work completed.	
	Survey Numbers	Plot Nos.	Survey Numbers	Plot Nos.
Radhanagari	--	--	960	981
Bhudargad	534	232	943	325
Gadhinglaj	432	218	327	189
Karvir	205	92	205	92
Shirol	298	132	298	135
Shahuwadi	322	328	217	328
Katkol	133	198	133	198
	-----	-----	-----	-----
Total	1924	1200	2983	2248

Similarly in Panhala taluka seven thousand one hundred fifteen old boundaries were measured. They also measured nineteen thousand one hundred seventy four sub-divisions in 1936-³⁵." The work of survey of Katkol taluka was completed by a head surveyor, a clerk and fourteen surveyors including one peon in 1937-38. They measured seven hundred twenty four survey numbers and seventy seven plot numbers. The classification work in the Katkol taluka completed in 1937-38.³⁶"

Seventeen thousand two hundred thirty five old boundaries and twenty three thousand six hundred sub divisions of Panhala taluka were checked and measured by five field parties consisting of one Nimtandar, thirteen surveyors, one clerk and peon in 1938-39. The survey officers visited seventy five villages of Panhala taluka.³⁷ From 1939 to 40 the work of Karvir taluka connected with old boundaries and measurement of division was undertaken by the Government.³⁸

The salaries of Nimtandar, Mojanidar and Talathi in this period could be understood from a civil order of the Chief Secretary of the Kolhapur State dated 18th December, 1935. According to this order the Nimtandar received rupees eighty as his monthly salary. The Talathi received about forty rupees and the Mojanidar got twenty two rupees as monthly salary.³⁹

The work of Hissa-Phalani i.e. the demarcation of shares in the plot was started in 1936-37. Eleven surveyors, one Nimtandar were engaged on the jungle and prant phalani work.³⁹ Similarly in the year of 1937-38⁴⁰ and 1939-40⁴¹ the work of hissa phalani was done. In this period the survey officers and the revenue minister visited various talukas and they solved cases connected with survey, measurement and boundaries.⁴²

Assessment System :

After the survey of land and old boundaries the work of assessment of land and crops was taken. It was called as

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 " Akarband " e.g. assessment. In 1930-31 the assessment of the land in Shirol taluka was increased only at the rate of $6\frac{1}{4}$ p.c. due to failure of crops. In the following table the land hold by six land holders and the assessment on their land has been mentioned. Though the classification of the land has not been mentioned, the figures give us some understanding of the assessment on land.

TABLE NO. 5

Name of the Land Holder	L a n d		Assessment on land	
	Acres	Gunthas	Rs.	Annas
45 Ananda Dhondi Katkar	3	21	2-	12
Tarabi Mandlik	2	33	7-	03
Narayan Jadhav	3	16	16-	10
Khanderao Gaikwad	3	17	11-	10
-- " --	16	27	8-	00
	8	26	4-	00
Yesubai Pawar	16	9	73-	00
Ramchandra Pawar	14	16	20-	00

The contemporary sources mention the Akarband party dealing with the " Kami Jasti " Patrakas. This was a party of officials sent by the Government to deal with the complaints

regarding increase or decrease in the akar i.e. assessment. The Akarband party with one supervisor, two tapasnisdar and clerks visited all the villages of Shirol taluka in 1930-31 and they decided one hundred thirty five cases of the Shirol taluka. In 1931-32 Akarband party composed of one Supervisor, two tapasanisdar and five clerks visited to Shirol taluka for measuring the sub shares and one supervisor and two tapasanisdar completed the work of Kami-Jasti patraks in 1932-33. Supervisor and tapasanidars visited the villages of Mandani, Dharangutti and Wadgaon in Hatkanangale taluka and they prepared new maps. In this year three hundred eighty cases of Kami-Jasti Patrakas were disposed off by the Akarband party. Similarly the work regarding Kami-Jasti patraks was done by Supervisors and tapasanisdar in 1933-34. The Akarband party also visited Hatkanangale and Gadhinglaj taluka in 1934-35 and 1935-36 respectively. In 1936-37 eight hundred eighteen cases of Kami-Jasti Patraks were disposed. They also did the work of correcting the maps of twenty seven villages in 1937. In 1937-38 and in 1938-39 Akarband party visited seventyfive villages in Panhala taluka.

The table number six shows that the area under bagayat (i.e. irrigated land) and the jirayat land (i.e. the land receiving water only from the rain) remained virtually constant in this period. The taxation also shows the same constancy.

Boundary Disputes and Injuries to Boundary Mark :

There used to be some disputes regarding the boundary between two holdings. Similarly some cultivators used to inflict injuries to the boundary marks. From 1922 to 1940 one hundred seventy eight cases of boundary dispute came for decision before the revenue judicial officials. Out of these cases only forty five cases were decided till 1940. While in 1922-23 and 1939-40 there was not a single case of dispute in 1925-26⁵⁴, 1928-29, 1934-35, 1935-36 cases of boundary dispute were not decided. During the year in 1929-30⁵⁵, 1931-32 only one case was solved out of fourteen and eleven cases respectively.

Such cases came before the officials of the revenue and judicial departments while the boundaries were set right with the help by the revenue officials and those found guilty of making injuries to boundary marks were fined by the judges of the Kolhapur State. A few cases will illustrate these points.

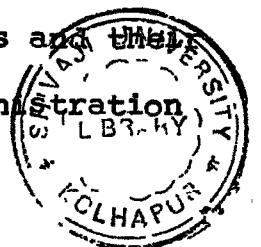
The Government also solved the cases connected with injuries to boundary works. In 1927-28, five hundred fourteen and 1937-38 only seven cases were came for the consideration of judicial department. The maximum fine was collected rupees Six thousand five hundred seventy two from five hundred fourteen cases in 1927-28⁵⁶ and was rupees two hundred fifty three from seven cases in 1937-38⁵⁷. The minimum amount of fine collected was rupees one hundred eighty two in 1926-27⁵⁸.

Cultivable and Cultivable Wasteland :

In 1923-24 the highest acres of cultivable land was ⁵⁹ acres ten lakh seventy nine thousand one hundred ninety three and in 1928-29 the lowest total acres of land was nine lakh ⁶⁰ ninety nine thousand nine hundred thirty nine acres. The ⁶¹ maximum occupied cultivable land was in 1927-28 ninety nine lakh two thousand seven hundred twenty acres and minimum occupied area was eight lakh fifty thousand six hundred thirty ⁶² four acres in 1937-38. In 1937-38 in Kolhapur State proper the maximum cultivable waste land was one lakh sixty thousand ⁶³ three hundred sixty eight acres and in 1930-31 in the same state minimum cultivable waste area was sixty eight thousand ⁶³ three hundred fiftyfive acres.

Revenue Officials :

Mamlatdar, Nimtandar, survey officers, tapasanisdar, surveyors etc. were revenue officials. From 1922 to 1940 Shri S.A.Indulkar was Chief revenue Minister of the Kolhapur State. He was also a member of council of district magistrate. ⁶⁴ Shri D.B.Mali was district officer till 1929. From 1929-30 he was appointed as survey settlement officer till 1940. Mamlatdar was the chief revenue officer appointed by Government on each district and talukas. All the district servants were placed under the order of Mamaltdar . Similarly various Mahalkaris were appointed on various mahals and their duties were connected with the revenue, Mahal administration



and the responsibility of protection of Mahal. The village was a smallest unit with the Patil as a headman. Patil collected revenue with the help of village servants. The Patil should had authority to employ all the police and revenue servants belonging to his village to aid him in the discharge of his duty reporting for punishment those who refuses to obey him. He would act according to the orders of Mamlatdars.

The Kulkarni was village accountant and at the time collection of revenue he helped the Patil. These revenue officials collected land revenue at the time of harvest from the cultivators. There were some instance when the talathis remained absent from the villages to which they were appointed and their absence created difficulties in the revenue administration. The Kolhapur Government therefore by an order of 6th October 1925 held Mamledar and Mahalkari responsible for the proper duty of the talathis . If the talathis failed in their duties, their higher officers namely viz. mamledar and mahalkari were to be fined.

Total Land Revenue of Kolhapur State :

The revenue officials collected land revenues at the time of harvest from the cultivators. The total amount of revenue would be sent to the Mahals and district treasury with the help of connected members. When chatrapati Rajaram came to power, the total income of Kolhapur State was rupees Seventy five lakh

seventy two thousand nine hundred fifty six only. But after the ten year it was rupees One crore thirty one lakh fifty two thousand one hundred fourty four only.⁶⁷ Moreover total income of Kolhapur State was increased which was rupees fifty five lakh seventy nine thousand one hundred eighty eight. The following table shows the total demand of land revenue the actual collection and the remission given in land revenue.

Reduction in Land Revenue :

Due to flood, famine and droughts the crops suffered heavily the Government under these conditions reduction in land revenue. An amount of rupees two thousand eighty five was deducted from the total land revenue in 1923-24.⁶⁸ This was the minimum amount deducted during under study. In the year, 1926, 1927, there was scarce rainfall in Kotkol mahal and consequently the crops suffered. The Government, therefore, gave concessions in the revenue to the villages in the mahal.⁶⁹ The maximum amount of rupees thirty lakhs eight thousand eight hundred thirty one was deducted from the total land revenue in 1939-40.⁷⁰

Private Irrigation :

Sugarcane, ginger, turmeric and vegetables were the main Bagayati crops which required regular supply of water throughout their growth. Such a water supply was possible from wells and canals.

Vihiri and Budki :

The wells were classified into two kinds e.g. 'Vihiri' and Budki, meaning pakka kachha wells. Budkis (Kachha wells) were utilised for drinking water and irrigation purposes. The budki well was created with a chain of 3 to 4 and their water was pumped out from the river and stream. A phad system under which men and bullocks sometimes buffaloes were pulled together, was used for pumping out water from budkis with the help of 'Mots' for irrigation purposes.

The following table gives us information about the number of Vihiris and budkis that existed in the Kolhapur State and irrigated the crops. Their numbers remained constant throughout the period of study.

TABLE NO.9

The table Showing the vihiris and budkis which were used for irrigation purposes.

Year	No.of <u>Vihiris</u>	No.of <u>Budkis</u>
1	2	3
1922-23	-	-
1923-24	-	-
1924-25	-	907
1925-26	-	907
1926-27	-	1003
1927-28	7821	936

Year	No.of <u>Vihiris</u>	No.of <u>Budkis</u>
1	2	3
1928-29	7833	963
1929-30	7886	953
1930-31	7932	875
1931-32	7941	975
1932-33	7948	976
1933-34	7964	1012
1934-35		
1935-36	7836	1014
1936-37	7891	1015
1937-38	7893	1015
1938-39	7900	937
1939-40	7894	987

Tanks and Dams :

Chhatrapati Rajaram constructed various tanks and dams for the development of agriculture and agriculturists. Rajaram tank was constructed at Sarnobatwadi in 1925-26. The Government spent rupees thirty thousand eight hundred sixty seven. The work of Rajaram tank was under the control of Mr. Puttuswamish. The water of this tank was firstly given for agricultural crops

such as sugarcane, turmeric and vegetables in 1928-29 ⁷² One hundred fifty acres were irrigated by water from the Rajaram tank. Similarly two hundred thirty four acres of land was irrigated by the Rankala tank. Chhatrapati Rajaram constructed two dams on panchganga river near Kolhapur as sufficient water ⁷³ could be stored in Laxmi tank at Fejivde and which flowed down the river Bhogawati into the river Panchganga. These two dams supplied water for irrigation of lands which was used for the cultivation of sugarcane and other crops. The dam of ⁷⁴ Banikre brokeout in 1937-38. The work of Valivade and Bavada dams was completed in 1939-40 and later it was called Rajaram ⁷⁵ dam. (In 1922-23 ⁷⁶ a total of twenty eight thousand five hundred ten acres of land was irrigated by various sources . ⁷⁷ In 1939-40 the area of irrigated land rose to fifty eight thousand six hundred sixty seven acres showing an increase of 100 % over the enitial year)

Land was also irrigated from the water of dams and tanks. Many dams and tanks were constructed and built by the Government for the promotion of agriculture. In the year ⁷⁸ 1922-23 one thousand two hundred twenty three acres were irrigated by dams. In 1939-40. Only one hundred twenty five ⁷⁹ acres irrigated by water from dams and tanks. It is possible that due to shortage of rain, water could not came in the area of dam. The table No.10 showing the total acres of land irrigated by wells, budkis, rivers and tanks from 1922 to 1940.

Tea, Coffee and Cardamom Plantation :

The plants of tea, coffee and cardamom planted at Panhala and Bhudargad.

The table No.11 about tea, coffee and cardamom plantation in Kolhapur State clearly indicates that the area under tea remained the same viz. eleven acres twenty one gunthas, while the production especially after 1935-36 declined. In the case of coffee plantation the area under the crop remained satisfactory from 1922-23 to 1928-29 and from the next year the area under coffee plantation was reduced to two acres and twenty seven gunthas. Similar reduction is also seen in cardamom plantation from the year 1923-24 to the year 1928-29. Cardamom was raised on only one acre of land. And from 1929-30 to the year 1939-40 cardamom was raised only on five gunthas of land. It can be thus seen that both the area and production from tea, coffee and cardamom plantations was considerably reduced in comparison with the area and production under Chhatrapati Shahu.

Encouragement to Cultivators :

The Government played an important role at the time of flood, famine and when cultivators came in danger. Government gave loans, Tagai loans during the bad time to cultivators. Chhatrapati Rajaram extended interest free and cheap finance to the cultivators for enabling them to buy ploughs and cattles, seeds and fertilizers to create irrigation facilities such as

wells and budkis. For the development of agriculture Government established various agricultural institute, schools and various farms. These institutes and farms played an important role towards peasants.

Loans to Cultivators :

By way of encouragement to agriculturist the loans were given to land owners and others. In 1922-23 and 1923-24 Government amounted to rupees two lakh seventy five thousand nine hundred twenty seven and five lakh sixty seven thousand eight hundred forty two as loan to cultivators respectively. In 1924-25 the Government gave an amount of rupees five lakh seventy five thousand eighty three. Similarly loans were supplied to cultivators by agricultural banks and societies on nominal rates. In 1929-30 the amount of rupees thirty nine thousand four hundred eighty seven advanced to land-owners and agriculturists. In 1931-32 amount of rupees five thousand two hundred eighty three as loans and advanced to land owners, agriculturists and others.

In the year 1932-33 and 1933-34 amount of rupees twenty two thousand seven hundred eighty three and two lakh forty one thousand three hundred seventy eight were supplied to the agriculturist and others as loan respectively. Similarly rupees eighty nine thousand one hundred thirty nine were advanced as loan to landholders, farmers and others in 1934-35. In the year 1935-36 the Government gave loans to farmers and

others rupees One lakh fifty nine thousand two, In 1936-37⁸⁸
 and in the year 1937-38⁸⁹ rupees one lakh twenty three thousand
 three hundred sixty one and seventy five thousand five hundred
 seventy eight gave to farmers and others as a loan by
 Government respectively. In the year 1939-40 the crops of the
 cultivators in Karvir Ilakha suffered heavily. The Government
 gave exemption in the revenue. The mahar rayat of village
 Umalwad in Petha Shirol therefore congratulated Chhatrapati
 Rajaram for the exemption. These mahar rayat in their
 application further pointed out to the Chhatrapati that they
 were in the debt of the bankers. The total amount of debt was
 rupees forty thousand. They requested the Government to give
 a grant of rupees twenty five thousand at a low interest of
 rate, so that they could pay the debt of bankers which had
 heavy rate of interest. Chhatrapati Rajaram accepted the
 request and ordered that the mahar rayat should be paid rupees
 twenty five thousand at a low rate of interest. This amount⁹⁰
 was to be repaid to the Government in ten years.

Tagai Advances :

The Government or Kolhapur State advanced rupees Eight
 hundred seventy nine as tagai in 1922-23 to farmers.⁹¹ In 1923-24
 no new tagai advances were given to cultivators. But in
 1924-25 and amount of rupees one hundred seventy three was⁹²
 supplied by the Government.

Work of Agricultural Department :

Government played an important role for the development of agriculture and agriculturists, various museums, organizations, institutions, farms were established. In 1926-27 agricultural department was divided into five parts e.g. agricultural propoganda agricultural organization, agricultural services, agricultural education and general.

Department of agricultural propoganda, distributed seeds of Big Japan, fifty pounds seeds of Kumtha and Gadaga No.1 among the cultivators. Iron ploughs were given at low rate to the cultivators. About three hundred farmers saw the presidency agricultural show. Information about diseases of crops was given by connected officers.

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Agricultural Organization :

Agricultural organization developed in various talukas in 1926-27. These organizations explained informations about seeds, agricultural implements and manure societies in the Panhala and Hatkanangale taluka.

Agricultural Services :

For irrigation purposes department purchased boring machines and it bored in five places. Afterwards demand of boring machines was increased. Water finder machine testified

in ten places and it was sent by agricultural chemister of the Government of Bombay. The Government of Kolhapur State⁹⁴ purchased some machines in 1926-27.

Agricultural Education :

The Americal Mission started the agricultural school in Kolhapur and it was given ten rupees as scholarship to per student. Seven students in the first year class studied the agricultural subjects. Agricultural trial schools were opened in each taluka of the State. Chhatrapati Rajaram took interest in the work of agriculture department and he had decided to spend rupees one lakh for the Lord Irwin Agricultural Museum and other model farms.

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In 1927-28 two hundred pounds of new variety of Jawari e.g. the American Milo Jawari distributed in the Shirol and Raibag Mahal, similarly new variety of cotton named KUMPTA of fiftyfive pounds was distributed among the farmers of Shirol Petha and there it was found to gave a higher yield of about twenty five pounds of cotton. The Government also distributed the variety of groundnut seed like Big Japan among the cultivators.

A fair was held at Chinchli. The Kolhapur agricultural exhibition exhibited iron ploughs and useful implements for interculture. The Government supplied implements at a low rate⁹⁶ by hire to the farmers.

Copper sulphate was essential for the better growth of jawari crops hence Government distributed packets of copper

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sulphate free of charge to the farmers. In 1927-28 a taluka development association was organized in Hatkanangale. The power boring machine bored at five places and out of which four bores were successful in 1927-28. King Edward Agricultural Institute had brought 15-30 B.H.P. one tractor and it was supplied to the cultivators by hire. Like that of the last year the work of agricultural school continued.

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The Government decided new scheme in 1928-29 for the agricultural department. This department divided into two parts, Eastern division and Western division. Each division was under the control of inspector of agriculture.

Eastern Division :

The Government of Kolhapur State established eastern division in 1928-29 for the systematic agricultural administration. It consisted of four pethas and two mahals. Mr.G.L. Patil was a inspector of agriculture of eastern division. The eastern division was divided into four main heads, viz. Demonstration Farms, Agricultural Exhibition, Agricultural Education, Agricultural propaganda. Demonstration Farm 99 divided into two farms one at Kolhapur and another at Shirol. These Farms supplied various new varieties of seeds, vegetables, fruits etc.to cultivators. The work of eastern agricultural propaganda was to supply good seeds and to advice the farmers. The school class established, one at Kolhapur named Shahu School and one at Shirol Biss Class. Various 100 exhibitions arranged in the eastern division under the study.

Western Division :

The Western division consisted of Panhala, Radhanagari and Bhudargad Peth including fifty five villages. The division was under the control of Shri S.R.Mohite. He was the inspector of agriculture. Four parts of western division under the direct control of Kolhapur state i.e. agricultural Propaganda, Agricultural services, Agricultural education and the Agricultural publication. New varieties of seeds, vegetables and fertilizers supplied by the department, to the farmers. Agricultural services were provided by the department to the Farmers. Education facilities in agriculture were be given by the Government. Agricultural Bias Class opened at Radhanagari in 1928-29 various Agricultural Publications were written in marathi distributed among the cultivators. Other minor work connected with agriculture were done by the western division. The work of museum, supply of seeds, distribution of fertilizers, agricultural implements and the role of king Edward Agricultural institute towards farmers would be elaborated below.

The Farms :

The farms played an important role in the development of agriculture. There were two farms and one museum was carried the work of agriculture in the Kolhapur State . One farm at Kolhapur another at Shirol and third one called Lord Irwin Agricultural Museum.

Museum Farm :

For the improvement of agriculture, Museum farm which
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 was held at Kolhapur, supplied various variety of seeds, fruits
 and vegetables to the farmers at the time of sowing.

Shirol Farm :

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 Shirol farm was opened in May 1928-29 at Shirol. It
 was tried to dry farming into irrigated crops. The principal
 work of this farm was to supply various varieties of seeds to
 cultivators. This farm was located in the desh track where
 rainfall was scared. Like that of Museum Farm, Shirol Farm
 also distributed seeds and agriculture publications for sowing
 and understanding the knowledge of new methods of agriculture.

Irwin Agricultural Museum :

Irwin Agricultural Museum consisted of eight parts,
 field products, the implements and machinery section, forest
 products, pestology, marketing, rocks and soils and archology.

The museum introduced new seeds and advanced methods
 105
 of cultivation.

Sugarcane :

Improved varieties of sugarcane such as H. 19,544,
 106
 B 15,28, Java, Dloa were distributed to the farmers. In
 1930-31 farmers were advised to select good seeds of sugarcane
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 variety such as 289, Java No 213 for raising more production.
 In 1933-34 the variety of sugarcane like E.K. 28, POG 28, 78

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and H. 19, 89 was in the Kolhapur museum farm. In 1934-35 done the work in connection with test of more profitable yield of sugarcane. In 1939-40 the varieties of 2878, H. 19, 49, 419 etc.¹⁰⁹ of sugarcane was made and distributed among the cultivators.

Groundnut :

Museum farm distributed seed of seven hundred twenty pounds of Japan groundnut among the farmers and Japan spanish peanut were planted in 1928.¹¹⁰ Spanish peanut was much popular in 1929-30 among the farmers because it gave good turn out on lighter soil.¹¹¹ Shirol farm and farm of Kolhapur pointout general effect of different artifical manures on the crop of ground-nut. Groundnut seed was also supplied to the farmers in 1931-32. The museum farm and Shirol farm tested different varities for more profitable yield of groundnut in 1932-33.¹¹² Spanish peanuts and Big Japan variety were given a trial. The farmer yielded of two thousand two hundred twenty pounds per acre in 1934-35. The Government supplied One thousand seven hundred eighty pounds of Spanish ground nut to the farmers in 1935-36. In 1936-37, one thousand three hundred eighty five pounds of ground-nut seeds supplied free of cost.¹¹³ In 1937-38 Spanish Kopargaon No.1, a strain selected from Karad groundnut which was supposed to be resistant to tika disease was tried along with local spanish peanut called Uptya. The production increased from one thousand six hundred eighty six to two thousand one hundred sixty pounds.¹¹⁴ Groundnut Variety of

Kopargaon No.1 was successfully grown. It gave a better¹¹⁵ result of nine hundred fifty four pounds per acre in 1939-40.

Cotton :

A new variety of cotton named Gadag No.1 was planted in various places. Gadag No.1 and Jayvant variety of cotton¹¹⁶ were planted in 1929-30. The cotton named Dhulli No.1, Gadag and Jayvant were cultivated on the farm at Shirol in 1930-31. Cotton variety was more profitable to the farmers. Like the last year the strain of cotton Jayvant was sown on the museum farm. The seeds of four hundred pounds of cotton Jayvant was¹¹⁷ supplied by the Shirol farm to the farmers. In 1934-35 cotton seed gave an yield of six hundred twenty pounds per acre and eight hundred forty pounds seeds of cotton Jayvant were¹¹⁸ supplied free of charge. Similarly eight hundred forty pounds of Jayvant cotton seed were supplied to the farmers in 1935-36. Superior quality of Jayvant cotton was sold costly. One thousand four hundred pounds supplied free of charge among the cultivators. One thousand four hundred ten pounds of cotton¹¹⁹ seed distributed free of cost to the farmers. In the year 1938-39, the seed of Jayvant cotton upto one thousand two hundred pounds were distributed free of charge to the¹²⁰ cultivators. In 1939-40 the variety of cotton Jayvant gave¹²¹ yield of eight hundred forty five pounds per acre and one thousand four hundred pounds cotton seeds were distributed among the farmers.

Rice :

New variety of rice like Mugad and Antersal selected ¹²² for the distribution among the peasants that was two hundred pounds. Rice variety of Mugad and Antersal totally one hundred pounds and two hundred twelve pound respectively were distributed in 1930-31. ¹²³ Rice variety of thirty two was produced by the farmers in the Kolhapur State and it was more profitable than the local varieties. In 1933-34 various varieties of rice such as Kolamba one hundred one, Havale, Mugad, Redemusale and Kaligageli gave good results in Kolhapur ¹²⁴ State. In 1934-35 Kanerisal and Patne No.6 gave good results and more profitable yields. A new variety of rice like Mugad, ¹²⁵ Kolamba forty two, Pada, were also produced in 1935-36. On Museum farm trials of paddy strains Mugad were taken and Redmasle Kharpe mote and Ranerisal were raised gave good results. The variety of rice like waksal, patni and kolamba were grown in 1938-39. In 1939-40 paddy had given average ¹²⁶ out turn of ten maunds per acre. In the Desh area rice was not raised and therefore, there were few cases of rice which were raised on Shirol Farm.

Jawari :

A new variety of American mil Jawari was tried to be raised on the farm and it ripened within three months. The Government distributed two hundred packets of copper sulphate for steeping the crop jawari. The Government distribute ten

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pounds of American jawari free of charge among the peasants. The museum farm attempted to produce more profitable yields of jawari and pointed out these yields to the farmers. American jawari, white, yellow and satpani jawari of forty pounds were distributed. American jawari, white yellow and fifty pounds of satpani jawari was testified. At the time of sowing, the cultivators were adviced to dust these jawari seed with sulphur powders. Jawari No.5 was raised in the northen division in 1931-32. For sowing the seeds sieve method was adopted among the peasants. A new variety of jawari named Sundiya was sown and grew quickly and it was ready to harvest within forty days from the time of sowing. The seeds of Sundiya jawari of six pounds were supplied in 1933-34. The variety of new jawari sundiya raised for cattle fodder within forty days. The crop of jawari and fodder raised on the Shirol agriculture farm.

Wheat :

A new variety of wheat named pusa No.2 was raised on the farm of Shirol. The variety of wheat pusa No.5 produced by the Government of Kolhapur State. The seed of wheat Pusa No.4 gave an yield of one thousand two hundred thirty two pounds per acre and fifty pounds were supplied to the farmers. In 1934-35 the crop of wheat gave an yield of seven thousand six hundred seventy four pounds per acre and fifty six pounds were supplied free of charge to the farmers. Another variety of

wheat No.88 was raised in 1936-37. The seed of wheat pussa number one hundred eleven gave good yield of one thousand two hundred twenty four pounds per acre¹³¹. Similarly wheat pussa No.3 gave a better yield of over 25 % than the local Khapli. The sample of raising the Pussa No.4 was shown by the Government to the cultivators. The seed of Pussa No.3 was taken as a garden crop and it was found to yield six pound per acre.¹³² One bag of pussa No.3 was distributed among the cultivators.

Tobacco :

Tobacco was a cash crop in the Kolhapur State. It was grown and comparison with local variety such as Surti and Pandharpuri.¹³³ But due to heavy rain variety failed. The Shirol Farm cultivated the dry crops, named tobacco including Surti and Pandharpuri. The varieties of tobacco three were raised in the Kolhapur State in 1931-32. The Shirol and Museum farm produced the crops of tobacco. The crop proved to be¹³⁴ instructive to the student of agricultural school.

Nagali :

From Hatkhmba (Ratnagiri) farm nintytwo pounds of nagali seeds brought and distributed. The nagali seed strain A 16 which was newly imported and it gave 40 % increase in the yield over the local strain. The different varieties of Nagalis like B 11, E 31, A 62, E 82 ripen in 132 to 142 days.¹³⁵ Radhanagari farm supplied pure seed of nagali 62, 82 to culti-¹³⁶ - vations.

Bajari :

A new variety of seed of bajari named 20 Jamnagar Joint
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were supplied to the cultivators. The shirol farm took the trial
of African bajari and it was grown successfully. It is long,
earhead about three and half feet in length, induced most of
the cultivators to grow this crop. The variety of African
Jawari was trialed on a large scale and found to grow very
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successfully.

Seeds of Vegetables Supplied :

Museum farm tried to produce english vegetables such as
cabbage, cauliflower, knolkhol and vienna on the museum farm.
Farmers were advised to plant various vegetables. The farm
139
also grow different, varieties of tomato in 134-35. To increase
the cultivation of vegetables in the Kolhapur State which
imports large quantity from outside seeds of cabbage,
cauliflower and other vegetables were distributed to fifteen
140
farmers.

Supply of Fruits Seeds, Seedlings and Grafts :

There was good scope for growing various fruit trees
in Raibag Mahal where the climate was most congenial to the
fruit culture. The Government supplied fruits and seedlings
of fruits such as mosambi, lemons, pomegranates, chikus,
grapes to the farmers in Raibag Mahal. A nursery was started
at Radhanagari and Mr.S.B. Patil, the fieldman, was appointed
for the work of nursery. The fruit plants of Banana , Mosambi,

Lemon, Grape, Papaya and Chiku were grown on the museum farm. The Government tried to enable the farmer to get a clear idea and information about the cultivation of various fruit trees. In the year 1932-33 five hundred of grafts of mosambi, santras and Kagadi lemons were supplied free of charge to the farmers
142
of six gardens. Fifteen gardens were checked and bore bunds 50 were distributed free of cost to the cultivators. In 1935-36 special efforts were made to develop the fruit culture in Kolhapur State. Grafts of Mosambi, Santra and Lemons were distributed in number of seven hundred fortyfive, nintyfive and five hundred seventyseven respectively. Similarly mosambi, santra, lemon, Italian lemon Mango and Guava seedlings were
143
distributed respectively. The fruit grafts were distributed among the cultivators and planted under the direction of agricultural departmental staff. Like the last year a number of grafts of mosambi, santra, kagadi lemon, fig, mango and
144
guava were supplied to the farmers. The graft of mosambi, santra, lemon and mango were distributed in number of 340 three hundred forty, seventyfive, three hundred twentyfive and one hundred twentyfive to the farmers respectively. Agricultural Officer toured in western division and distributed seeds and seedlings. The table shows the number of seeds and seedlings quantity and the number of cultivators which was freely
145
received grafts or seeds in 1939-40.

Name of seeds, Seedlings, and Grafts.	Quantity	Number of Cultivators.
Mango	127 Plants	12
Mosambi	100 "	16
Lemon	109 "	15
Lemon Italian	25 "	10

The number of fifty, fifty, one hundred, one hundred fifty and one hundred grafts were distributed of mosambi, Santra, Kagadi lemon, mango grafts and pomegranates of the cultivators respectively.

Supply of Fertilizers :

The Government of Kolhapur State supplied various fertilizers at the time of sowing and growing operation of the crops. With the help of agricultural research and fertilizers good results could be taken. The packetes of copper sulphates¹⁴⁶ were distributed free to cultivators. In the next year two hundred packet of copper sulphate were distributed for steeping¹⁴⁷ jawari to the farmers. The Government also advised to farmers how to use fertilizers and how to give doses per acre. In number of three hundred seventy five packets of copper sulphate were freely distributed among the cultivators of Radhanagari and Bhudargad Pethas. The Government also selected 16 plots of sugarcane to show the value of sodium nitrate as to dressing

the sugarcane crops. The use of Ammonium Sulphate was also advised. The packets of copper sulphate also were distributed in Panhala and Shahuwadi. The use of ammonium sulphate proved
148
successfully at Tarale. In 1931-32 ammonium Sulphate was distributed to the cultivators of Borgaon, Solankur and Savarde, The Government also supplied calcium Cyanide for
149
killing rats on rice field and mango happer. The Government of Kolhapur State also distributed fertilizers to the cultivators.

The Work of Irwin Agricultural Museum Towards Pesants :

The Irwin Agricultural museum advised the farmers to utilities various agricultural implements and to adopt the
150
scientific methods for the development of agriculture. This museum consists of eight parts such as field, Implements and Machinery, Forest, Pestology, Marketing, Rocks and Soil and
151
Archeology. The permanent exhibits were established for the modern and scientific implements of agriculture and various cultivators visited to see agricultural implements which were kept in the museum. The section of implements and machinery was again divided into four court. The court exhibited iron and wooden ploughs, iron riding ploughs, interculturing implements, sugarcane crusher and chaff cutter, cream
152
separator and butter churn. Various varieties of seeds, sample of leaf diseases and crop pests were kept in the museum. The sample of wheat dust and redrot on sugarcane was also kept in

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the museum. The section of rocks and soils gave an idea about soil erosion, conservation of moisture and levelling of land. In 1934-35¹⁵⁴ and 1938-39¹⁵⁵ the section of marketing gave a keynote to the farmers in grading his farm products for realising better prices in market. Black gul, tobacco and paddy were exhibited and cotton from Hubali and Jawari of Khandesh market and chillies were kept on other side of museum.

Role of King Edward Institute Towards Cultivators :

The King Edward Institute played an important role for the promotion of agriculture. The institute supplied tractors, boring machines, water finder machines, seed of various crops and grafts to the cultivators. It also gave some funds and scholarships to encourage the study agriculture by the students.

1) Land Ploughed by Tractor :

A tractor of 15-30 B.H.P. was given to cultivators by hire. In 1928-29¹⁵⁶ and 1930-31¹⁵⁷ fifty acres and thirty gunthas and one hundred seventy acres ploughed by tractor respectively. The land of acres two hundred twenty five and gunthas thirty¹⁵⁸ ploughed tractor in 1931-32 and acres two hundred forty five and gunthas twenty seven ploughed by the tractor of institute. In 1933-34 and 1934-35 land of acres one hundred eighty and gunthas three and acre eighteen ploughed by tractor respectively. In the next year one hundred eighty four acres¹⁵⁹ of land ploughed. In 1936-37 only eighty four acres ploughed

by institute tractor. In 1937-38 and 1938-39 the tractor of institute ploughed an acres of one hundred sixty five and one hundred thirty four and ploughed the gunthas of thirty five and gunthas ten respectively. The acres of forty four and gunthas fifteen ploughed by tractor in 1939-40.

Work of Boring Machine :

Irrigation of crops or supply of drinking water especially in certain drought straiten areas was taken over by the Government. The following table will show the efforts made by the state to have bore wells in the Kolhapur State.

Year	Number of bores taken
1926-27	5
1930-31	8
1932-33	8
1933-34	12
1934-35	18
1935-36	28
1936-37	21
1937-38	17
1938-39	14
1939-40	7
Total	138

It can be seen from this table that the Kolhapur State under Chhatrapati Rajaram made sincere efforts to increase irrigation of land in the period 1926-27 to 1939-40 i.e. about in a period of fourteen years. As mean as one hundred thirty eight bores were taken in the small kingdom of Kolhapur.

Water Finder Machine's Work :

In order to locate the places of borewells, and ordinary wells machines to find water were utilized. The work done by water finder machine at eighteen places in 1932-33¹⁶¹ 1933-34 twenty two and twenty five places machine worked, out of twenty two places results were came from five places successfully. The services of those machines were requisitioned various talukas in which from six places digging or boring was under taken in 1935-36.¹⁶² In 1936-37 the water finder machine worked in eighteen places and successfully result came from ten places. From the three places out of fourteen good result would came in 1937-38.¹⁶³ In 1938-39 and 1939-40¹⁶⁴ . Water finder machine digging fourteen and seventeen place out of two and three places boring operation was successful.

Supply of Seeds, Seedlings and Grafts :

The king Agricultural Institute supplied various varieties of seeds, grafts some times freely and sometimes at the nominal charge to the cultivators for encouragement to agriculture and agriculturists. Kulamba paddy, distributed

eighteen farmer of Hatkanangale taluka and seeds among the two hundred seventeen farmers. number of three thousand eleven mango grafts, santras and lemon were distributed among two hundred twenty five farmers Number of six hundred one grafts of fruits also distributed to the farmers in 1936-37 . In the next year the number two hundred ninty mango grafts were distributed. The seed of paddy and vegetables distributed to farmers of Karvir taluka. The seed of cabbage and tomato, vegetables and the grafts of mangoes were distributed free to farmers in 1939-40. New system adopted by institute for the development of bee breeding. The institute kept twentynine artificial bee hives at the farm of Radhanagari and Kolhapur. The hives of thirteen were distributed to poor farmers.

Similarly the work of Poultry farm was satisfactory done by institute in various talukas during the period under study.

The institute had its own library, various agricultural books and magazines were kept in it. The institute distributed twenty five copies of agricultural magazines ' Shetki and Shetkari ' among the farmers.

Agricultural Funds :

A few institutions supplied funds to the agriculturists. The Victoria Memorial, King Edwar Memorial, Yuvraj Sawagat, Huzur Sawagat and Shiledar Sawagat Fund gave some rupees to the agriculture. Victoria memorial fund raised in 1904 on the

memory of Queen Victoria. From this memorial, farmers received some loans at a rate of low interest with a view to encourage agriculture. The interest on deposits which were kept for king Edward Memorial Fund was spent over the projects and for the improvement of farming and agriculturists. The fund was also spent on agricultural education. The funds of Yuvraj, Huzur and Shiledar sawagat Fund were spent on the poor Maratha Students and Farmers. In 1931-32 the fund of victoria memorial was utilised to encourage agricultural pursuits and an amount of rupees twenty six thousand three hundred fifty four was spent at a rate of interest 4 % by the memorial fund. The fund of king Edward Memorial spent on agriculture for the development of agricultural products. An amount of rupees thirty four thousand on a rate of interest of 6 % was spent by memorial for the above purpose.

Agricultural Exhibition :

The various agricultural exhibitions were held at various places. Some agricultural shows were also arranged by the Government. Some permanent exhibitions were held at Kolhapur. The museum farm had its own permanent exhibition viz. King Edward Institute. In this farm various agricultural implements, machineries, fertilizers and various varieties of seeds kept for cultivators and others.

In 1928-29 a small demonstration was held at Panhala Petha and Shahuwadi Mahal to show the actual method of steeping to the farmers. In 1929-30 Mr. G.L. Patil was General

Secretary of exhibition. In this exhibition implements machineries, land development systems, fertilizers, cattles, soils etc. were shown to the people. The thousands of people visited the exhibition from 19th November to 25th November 1929. In the agricultural exhibition held at Sarawade in 178 Radhanagari taluka, there were four stalls arranged by 179 agricultural department. The Irwin Agricultural Museum 180 arranged various exhibition 1936-37. One agricultural stall was organised by the Kolhapur State in the Karnatak 181 agricultural exhibition held at Belgaum. On January 1938- the Khilar bullocks and Krishna Valley cows were exhibited and they got two gold medals in it. In the next month All India Cattle show was held at Delhi. The Kolhapur State Cattle Stall was exhibited and in heifer of Khillar, and the Sindhi bull got first rank and prizes respectively. The agricultural stall was organized by the agricultural department in the farmers fair and cattle show held at Pattan Kodoli in January 182 1939.

Agricultural Stock :

It is necessary to find out that the agricultural animals which were utilized at the time of ploughing, sowing, harvesting etc. and the implements such as ploughs, carts, sugarcane crushers, oil engines, pumps and tractors which were 183 useful for doing the agriculture. The table No.11 shows that number of bullocks, cows, buffaloes, sheeps and goats, ploughs,

sugarcane crushers, oil engines and pumps the period under Study.

Veterinary Department :

To control the diseases of animals the Government established various dispensaries in various places. The risalala veterinary department was done the work in 1925-26 of wild type of rinder pest which was failed at Radhanagari
184
area. Shri Vijayamala Maharani Veterinary Hospital established on 26th June, 1927. The number of six hundred thirty one cases were treated in 1928-29. This veterinary hospital maintained
185
by Panjarpol Sanstha in Kolhapur. In 1939-40, two, new
186
dispensaries were opened at Gadhinglaj and Jaysingpur.

/Agricultural Education :

The Americal Mission started agricultural school in Kolhapur for the purpose of agricultural education. Two agricultural schools one at Kolhapur and another in Shirol were opened.

Shahu Agricultural School :

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Shahu agricultural school was attached to the Museum Farm and it was opened by Governor General of India. In this school two years course was taken by school department on scientific agricultural lines. The sons of farmers were admitted in this school. Various subjects were taught such

as agriculture, poultry, veterinary, land serving etc. by the school staff. They trained in the dairy, marketing, co-operation, geography by the school staff. The process of ginning and spinning of Cotton was also taught in this school. The students had received from rupees eight to ten as a scholarship from the Government.

Bais Agricultural Class at Shirol :

Bais agricultural course had been introduced into vernacular school at Shirol. In this school agricultural lessons were compulsorily taught to the boys of Vth, VIth and VIIth standards in addition to their regular study. The main object of this course was that after the completion of training, they would not try for a clerical job, but would take interest in the improvement of farming. Similarly the agricultural Bias Class was opened on 11th July, 1929 at Radhanagari.

Patil Talati Classes :

Patil Talati classes were conducted by Ilakha Panchayat for giving instructions in revenue accounts with a view of training suitable students in the agricultural and revenue matters. Students were taught by school staff. After completion of their training they were appointed as village officers in various villages by the Government. This class was attached to the training college. Trained talatis received more salary than the untrained.

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