



IMPACT OF LAND DEVELOPMENT SCHEME ON THE PREVAILING AGRICULTURAL PRACTICES OF TRIBAL FARM HOUSEHOLDS IN VIJAYANAGARAM DISTRICT OF ANDHRA PRADESH

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Abstract:

To resolve the structural problems underlying the tribal economy the Andhra Pradesh Government evolved Tribal Development Project (APTDP) with the assistance of International Fund for Agriculture Development (IFAD). In terms of natural resource management, the most significant activity of the project has been the attempt to use settled irrigated agricultural systems to replace the traditional methods of shifting (Podu) cultivation. The aim is to improve household food security through the cultivation of high-yielding paddy rice and horticultural crops, as well as to protect the environment against deforestation and soil erosion. In this study an attempt is made to analyze the prevailing agricultural practices of the selected Tribal farm households in the light of the agricultural development programmes implementing by the ITDAs in the selected mandals relating to land development. The important economic indicators identified on the front of analyzing the prevailing agricultural practices of Tribal farm households are: (1) cropping pattern, (2) fallow land, (3) intensity of cropping, (4) shifting cultivation. The influence of the land development programmes are examined making a comparison of the above aspects of sample households of selected Tribal farm households.

Keywords: Shifting Cultivation, Horticulture, PVTGs, Land Development, Agricultural Practices.

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I. Introduction:

In India out of the total Scheduled Tribe (ST) population of 67.8 million, about 80 per cent are found in central India, 12 per cent in the North Eastern States and the rest in southern India. Since the President of India issued the first notification to recognize the STs in 1950, India had no policy to deal with indigenous and tribe peoples of the country. The STs constituted about 8.61 per cent of the total population according to 2011 census and remain in the lowest ladder of the society in all respects. The government of India identified all STs as primitive races. In the Hindi text of the constitution of India, the Scheduled Tribe is translated as *Adimjati*, literally meaning “primitive races”.

Dr Rajendra Prasad, first President of India suggested *Adimajati* as a translation for the Scheduled Tribe as a compromised text by stating that it was used in Bihar. Mr Jaipal Singh and Mr. A V Takkar insisted on the use of the word "Adivasi" instead of “Vanajati” to describe the Scheduled Tribe during the debates at the constituent assembly. Article 366 of the constitution of India has defined the scheduled PTGs as such of those PTGs or tribe communities which have been so declared by the constitution order under Article 342 for the purpose of the constitution. There are 461 ST groups [Singh.K.S1994] who were identified as STs. They were earlier described as aboriginals, primitives, adivasis and some other names such as Vanajathis and Girijans. Various tribal groups of our country are at different stages of economy starting from food collecting stage to settled agriculture.

II. Review of Literature:

A.K Sharma pointed out that, Government of India has not only failed to encourage the development of tribals but has actively maintained them under development. He also stated that the laws and programmes have failed because of the attitudes of the powerful feudal elitist groups and non-involvement of tribals in the development process.

Tribal Cultural Research and Training Institute, Hyderabad and Agro Economic Research Centre, Waltair etc., have corroborate the views of earlier committees such as Malayappan, Ray, Dhebar commission etc., regarding the exploitation of tribals by non-tribal traders-cum-money lenders even after passing of protective legislation and introduction of agencies such as GCC, ITDA etc. In spite of huge investment outlays, the implementation of the tribal development programmes is not a story of success. Approach to tribal development in the Sixth Plan states that the benefits accruing the tribals were inconsistent with huge investment. The Working Group on tribal development for Eighth Five Year Plan also observed that tribal Sub-Plan strategy has yielded results but these do not commensurate to the expectations and investments made so far. The area based and individual based programmes did not have desired impact.

The Eleventh Plan (2007-12) is entitled as ‘Towards Faster and Inclusive Growth’. The strategy of this plan for the development of the scheduled PTGs is based on inclusive growth. Under this approach, development and empowerment of socially disadvantaged groups and bringing them at par with the rest of the society is given top priority. In his context this plan considers education is the one of the most effective instruments of social empowerment and is vital for securing horizontal and vertical mobility.

Hence schemes for the educational upliftment of the STs have borne fruit although the gap between the general population and STs is still at unacceptable levels. An educational scheme in favour of these sections is going to be continued with redoubled vigour. While bringing the STs to national level may take time, certain aspects of the backwardness need to be immediately set right. Total eradication of the practice of bonded labour, which especially targets the STs, will be achieved in the 11th Plan. For this, intense efforts will be made to identify and rehabilitate bonded labour and their children. The Special Component Plan (SCP) for Scheduled Castes and the Tribal Sub-Plan (TSP) are two strategic policy initiatives to secure overall development of the STs and to remove all socio-economic and educational disparities between them and the rest of the population. It is disturbing to see that both these schemes have not been implemented with a full sense of commitment and involvement, either by the Central or by the State Governments. The 11th Plan will ensure that they are to be implemented with further innovations and deeper commitment.

III. Statement of The Problem:

Improvement in the agricultural practices and levels of socio-economic conditions of tribals are sought to be examined in terms of endogenous and exogenous factors. At lower levels of growth or stagnation traditionalism perpetuates itself and internal growth impulses are very weak or non-existing. Hence in tribal societies extraneous (non-economic) factors play a significant role. Social change was the consequence of non-economic factors, but over a period of time in causation with the other proximate causes the internal growth impulses may be internalized in the tribal economy. All these factors work as prime movers of change in the matrix of analysis as part of the process of cumulative causation. The analysis reveals that the improvement in the agricultural practices in the tribal areas is having the complexity of process. The improvement in agricultural practices may occur out of the simultaneous efforts of all the exogenous (non-economic) and endogenous (economic) factors.

To resolve the structural problems underlying the tribal economy the Andhra Pradesh Government evolved Tribal Development Project (APTDP) with the assistance of International Fund for Agriculture Development (IFAD).

In terms of natural resource management, the most significant activity of the project has been the attempt to use settled irrigated agricultural systems to replace the traditional methods of shifting (Podu) cultivation. The aim is to improve household food security through the cultivation of high-yielding paddy rice and horticultural crops, as well as to protect the environment against deforestation and soil erosion.

IV. Need of the Present Study:

Since independence tribals are spread throughout India with their racial differences, region-wise study assumes importance. Hence there is need for more and more micro level studies covering selected tribal areas of the country to throw light on the efficiency of tribal development programmes in bringing considerable change in the economic status of the specific interior areas.

In this section an attempt is made to analyze the prevailing agricultural practices of the selected Tribal farm households in the light of the agricultural development programmes implementing by the ITDAs in the selected mandals relating to land development. The important economic indicators identified on the front of analyzing the prevailing agricultural practices of Tribal farm households are: (1) cropping pattern, (2) fallow land, (3) intensity of cropping, (4) shifting cultivation. The influence of the land development programmes are examined making a comparison of the above aspects of sample households of selected Tribal farm households.

In this context an attempt is made to examine the impact of the major agriculture development programmes relating to land development programmes on the household economy of Tribal farm households. Before presenting the discussion on the impact of these schemes it is endeavored to present briefly an outline of the nature and characteristic features of the tribal agriculture. This gives a general understanding of tribal agriculture, which is significantly different from agriculture practice in the plain areas. Tribal economy is predominantly agro-forest based and agriculture constitutes the main stay of the tribals. The tribal agriculture for all practical purposes is different from what is observed in plain areas.

V. Objective of the Study:

1. Impact of Land development Programmes on the Agricultural Practices of the Tribal Farm Households in the study area.

VI. Methodology:

The discussion on the methodology, indicate sampling method used, how the data is ascertained, the statistical tools used for analysis and to sort out the limitations of the study. Multi stage stratified random sampling method is used in the present study. There are four stages in which sampling process is carried out. The first stage is selection of district, the second stage consists of selection of mandals, the third stage consists of selection of villages and the fourth stage is of selection of households.

Out of the nine District of Andhra Pradesh which have concentration of tribal population Vizianagaram District is selected due to the fact that the District have drawn worldwide attention through the tribal participation in the political upheaval of 1969-71. Another weighty reason is that this District was covered under AP Tribal Development Project (APTDP). The second stage of sample consists of selection of mandals. The selected G.L. Puram and Komarada are the tribal concentrated mandals. Also G.L. puram and Komarada mandals are covered under AP Tribal Development Project (APTDP) and these mandals are having a high proportion of tribal population.

After identification of tribal concentration in the panchayats from the G.L. Puram mandal, interior hilltract panchayats five villages are selected and simileraly from the Komarada mandal five villages from the plain areas are selected for the study. As a hole 10 villages are selected for the in depth study. For final selection of villages the extent of coverage or implementation of ITDA programmes under AP Tribal Development Project (APTDP) is given weightage.

From the selected villages from G.L. Puram mandal for each programme, a total number of 75 farm households are selected as a whole, and a total of 150 households are selected from those five villages (from each village 30 households are selected). Similarly from the villages selected from the Komarada mandal total of 75 farm households are selected for each programme and a total of 150 farm households are selected from 5 selected villages to cover two programmes. Total of 300 households are selected from the selected tow mandals of Vizianagaram District. As a whole the total of 300 households consisting of 160 marginal farms, 100 small farms and 40 medium farms are selected from the selected 10 villages of the selected two mandals of Vizianagaram District for undertaking in-depth study.

VII. Analysis of the study:

a) Cropping Patterns Of Households Under Land Development:

Tables 1 and 2 present the cropping pattern details of the G.L.Puram and komarada tribal mandals under land development scheme. Regarding the cropping patterns of G.L.Puram and komarada tribal mandals under land development scheme the total cropped area is estimated at 5.20 acres in kharif and 3.02 acres in rain season. GCA is estimated at 8.25 acres.

Table.1

Cropping Pattern of G.L. Puram mandal tribal Households

Farm Size	Kharif					Rabi			G.C.A*
	Paddy	Ragi	Small millets	Turmeric	Total Kharif	Gingely	Mixed cropping	Total Rabi	
Marginal Farmer	1.26 (47.65)	0.63 (23.83)	0.40 (15.10)	0.36 (13.42)	2.65 (100)	0.71 (57.14)	0.53 (42.86)	1.24 (100)	3.89
Small Farmer	1.37 (34.17)	1.02 (25.42)	0.81 (20.21)	0.81 (20.20)	4.00 (100)	1.37 (64.93)	0.74 (35.07)	2.11 (100)	6.19
Medium Farmer	4.15 (46.39)	2.01 (22.49)	1.39 (15.56)	1.39 (15.56)	8.95 (100)	4.10 (71.93)	1.60 (28.07)	5.70 (100)	14.65
Total	2.26 (43.47)	1.22 (23.47)	0.87 (16.67)	0.85 (16.39)	5.20 (100)	2.06 (68.27)	0.96 (31.73)	3.02 (100)	8.25

Source: Field Survey

Table.2

Cropping Pattern of Komarada mandal tribal Households

Farm Size	Kharif					Rabi			G.C.A*
	Paddy	Ragi	Small millets	Turmeric	Total Kharif	Gingely	Mixed cropping	Total Rabi	
Marginal Farmer	1.11 (40.58)	0.67 (24.35)	0.53 (19.48)	0.43 (15.58)	2.74 (100)	0.58 (59.09)	0.40 (40.91)	0.98 (100)	3.74
Small Farmer	1.53 (33.89)	1.09 (24.26)	0.94 (20.93)	0.94 (20.93)	4.50 (100)	1.38 (71.74)	0.54 (28.26)	1.92 (100)	6.42
Medium Farmer	4.12 (46.29)	1.98 (22.25)	1.40 (15.73)	1.40 (15.73)	8.90 (100)	2.88 (76.19)	0.90 (23.81)	3.78 (100)	12.68
Total	2.25 (41.87)	1.25 (23.17)	0.96 (17.82)	0.92 (17.15)	5.38 (100)	1.61 (72.41)	0.61 (27.59)	2.22 (100)	7.60

Source: Field Survey

The distributions of cropped area clearly indicate predominance of food crops for all the categories of farmers. Among the food crops paddy is the important crop constituting a major proportion of the cropped area in Kharif. Table-2 presents cropping pattern details of the Komarada mandal tribal households under land development scheme. The average cropped area per sample household is 5.38 acres in kharif and 2.22 acres in Rabi. The GCA is 7.60 acres paddy crop is the predominant crop in kharif and mixed cropping in Rabi. This is noticed in all the three categories of farmers.

From the above discussions and assessment of cropping pattern the following are some of the important findings. The cropped area is more in the case of Komarada tribes under the two agriculture development programmes when compared to G.L. Puram mandal tribal households. Thus it can be said that the check dam and land development schemes of ITDAs of Parvatipuram might have influenced the farmers decisions regarding the cropping pattern and the distribution of area under various crops grown. It needs to be recalled here that micro level factor like suitability of soil, food habits, cultural practices of farmers generally prevail over the decisions of the farmers regarding crop pattern. In this case also these factors might have constrained the farmers.

The agriculture development schemes however have increased cropped area in plains due to that the GCA of the Komarada mandal tribes is recorded high when compared to G.L.Puram mandal tribes. It is ascertained from the sample farmers that due to checkdam and land development schemes the Komarada mandal tribes are able to fetch water for more area in Rabi when compared to G.L.Puram mandal tribes. On the whole it may be concluded that the agricultural development schemes have positive influence on cropped area in rabi and GCA in case of Komarada mandal tribes. However these programmes do not have much influence on crop pattern of G.L.Puram mandal tribal farmers particularly the marginal and small farms.

b) Fallow Land:

Fallow land is generally defined as that part of land on which cultivation is not taken up in one season. In the study area the principal source of irrigation is a hill stream. The water is available for Kharif season. In few cases the water is available in Rabi also. The farmers in Rabi either have to grow dry crops or leave the land fallow during Rabi season. In areas where there is possibility of harnessing ground water the farmers supplement surface water with ground water during Rabi season. The agriculture development programmes like construction of checkdams and land development schemes help to minimize surface run of loss and make available water for Rabi season also thereby making possible cultivation in Rabi. Horticulture is grown even in dry lands. Therefore, it is assumed that these schemes reduce the land kept as fallow for want of water.

Table-3**Particulars of Fallow Land under Land Development**

(Figures are in percentages)

Farmers	G.L. PURAM MANDAL		KOMARADA MANDAL	
	Kharif	Rabi	Kharif	Rabi
Marginal Farmers	-	17.56	-	15.65
Small Farmers	-	36.23	-	34.76
Medium Famers	-	33.17	-	25.89
Total	-	28.99	-	25.43

Source: Field Survey

The fallow land particulars of the households covered under land development programme reveal the similar nature. The extent of fallow land is relatively low in case of Komarada mandal tribe to the extent of 25.43 per cent of the operational holding and it is 28.99 per cent in case of G.L. Puram mandal tribe. The proportions of fallow land to operational holding vary considerably among the two tribes farmers. However, according to the field reports of the households the extent of fallow land is in the declining trend because of the implementation of land development programmes in the study area in the case of the three categories of farmers. Across farms, the extent of fallow land is high in case of medium farms. From the above it is very clear that land development has played a positive role in considerable increase in cultivation in Rabi season which was hitherto very low for all the three categories of farmers.

c) Crop Intensity Patterns:

An examination of crop intensity helps to understand the level of intensive use of land. This is attempted with a view to know whether the sample farmers are cultivating land more intensively under different agricultural development programmes like Check dam, land development and horticulture. It is assumed that there is every possibility that farmers in plains, being a better position due to Check dam, land development, could more intensively cultivate land than the tribes in interior hill tracts. This is precisely what is examined here. Crop intensity is generally explained by

$$\text{Crop intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$$

The crop intensity is calculated for total sample farmers and for the individual farmer separately for both the Tribal farm households. The GCA is taken for net sown area of the operational holding of the farmers as given. Intensive cultivation is not much prevalent in the tribal economy as it prevails in the non-tribal economy. However, because of huge investments made for the provision of irrigation facilities through check dam and land development programmes, recently it has become possible to raise more number of crops. However, the intensity of cropping is very limited. The Intensity of cropping of the sample tribal farmers is relatively high among marginal and small farmers when compared to medium farmers. This shows that the lower size groups of farmers have been growing more number of crops rather than medium farmers. It is observed that in the study area particularly in the interior hill tracts the intensity of cropping cannot be increased beyond certain limit because of the underrating nature of the terrain and the limited water resources.

The details of crop intensity of the households across tribes and farms covered under land development scheme given in the following table 4.

Table -4

Intensity of Cropping Under Land Development

(Per household)

Farms	G.L. Puram	Komarada
Marginal	158.82	169.24
Small	155.15	174.87
Medium	154.23	179.42
All Farms	156.06	174.51

(Figures are in percentages)

The information relating to intensity of cropping among the households covered under land development scheme reveal considerable inter tribe differences. The intensity of cropping among the G.L. Puram mandal households is relatively low when compared to their counterparts in the plains. Among the

G.L. Puram mandal farm households crop intensity is high in case of marginal farmers, while among Komarada mandal households it has shown a different picture. The above discussion supports the assumption that the land development scheme helped the farmers in plains to more intensively cultivate the land. The intensity of cropping was considerably noticed for all categories of farmers.

d) Shifting Cultivation Patterns:

The tribal people in Vizianagaram district usually deal with wet, dry and Podu cultivation. The farmers raise both dry and wet crops. The dry land is rain fed while the wetlands are irrigated by streams; Podu cultivation is much prevalent due to the availability of low gradient hilly slopes. Podu is largely undertaken by G.L. Puram mandal and Komarada mandal households in the villages in interior hill tracts. Considerable changes have taken place in agriculture sector; so far the cropping pattern is concerned. Among different tribes, G.L. Puram mandal tribes are conducting more extent of Podu cultivation and their area under Kharif and Rabi seasons is relatively lower than Komarada mandal households. It may be observed that as much as 25 per cent of the total area of the major crops is under paddy cultivation.

Also it is noticed that, in the study area it has been estimated that nearly one fourth of total land is under shifting cultivation, among the major crops considered in the study, crops like ragi, red gram, samai, jowar, bajra, turmeric and a variety of mixed crops are grown under Podu cultivation. Though paddy is also grown in the area under this crop is negligible. More than 90 per cent of the Podu is held by marginal and small farms. In spite of the strenuous efforts made by the governmental and non-governmental agencies the practice of Podu cultivation is prevalent particularly in the villages of the hilly areas. It seems that some more efforts of the above mentioned agencies are needed to persuade the tribals not to resort to this primitive method of cultivation. The shifting cultivation patterns of the G.L. Puram mandal across farms covered under land development programmes are presented in the following Table.5.

Table- 5, Shifting Cultivation Patterns in the Study Area

(No. of households reported)

Farms	Land Development	
	G.L. Puram	Komarada
Marginal	65.82	60.74
Small	42.69	37.07
Medium	31.46	20.46
All Farms	46.66	39.42

(Figures are in percentages)

From the field reports it is observed that shifting cultivation was very much prevalent among the selected tribal households in the study before the commissioning of ITDAs in Komarada and G.L.Puram mandals. One of the important objectives sought to be achieved by ITDAs of Komarada and G.L.Puram are to wean away the Tribal farm households from the practice of Podu or shifting cultivation. ITDAs endeavor

to encourage tribals also take up settled cultivation for which quite a number of measures are implemented. These agriculture development schemes are supposed to encourage tribals to take up settled cultivation by promoting adequate irrigation there by tribals will be away from shifting cultivation. An attempt is made here to assess the influence of these agriculture development schemes on Podu cultivation.

The above table presents details of the number of selected households reporting shifting cultivation in case of both the programmes relating to land development. Across mandals there are no much significant differences. Among different categories of farmers shifting cultivation was prevalent mostly among marginal farmers and small farmers in the two mandals covered under the study. In the case of land development it is 39.42 per cent. Among the three categories of farmers shifting cultivation is comparatively more for small farmers in both the programmes. From the above discussion it is very clear that land development programmes totally have not succeeded in diverting the tribals from shifting cultivation. However, the point worth nothing here is that there is striking decrease in the number of households reporting shifting cultivation after being benefitted by the land development schemes.

e) Crop Yield Patterns:

A crop yield generally gives an understanding about the level of agricultural development in any region. Yield levels are generally determined by fertility of soil and the level of use of inputs like seeds, fertilizers, Pesticides, manure. Etc. The use of these inputs to a very great extent depends on the adequate and timely availability of water. In other words irrigation influences the farmers decisions regarding the level of use of inputs. With a due consideration to the above it is endeavored here to examine the impact of the check dam scheme on crop yields. In the present study the farmers in plains are in more advantageous position when compared to farmers in hill tracts with regard to the availability of water. It is assumed that the yields in the plains will be more compared to those in the hill tracts.

The crop yields were ascertained from the respondent. Average yields per acre calculated for two points of time for meaningful comparison. The yield comparison of vegetable crops (grown in Rabi) is not considered here since the farmers are growing more than four to five crops making it difficult for meaningful comparison. The information relating to the crop yield patterns of the selected tribes covered under land development scheme are presented in the following Tables 6& 7.

Table -6**Crop yields of G.L. Puram mandal farm households**

(Yield per Acre in kgs.)

Farmers	Kharif & Rabi				
	Paddy	Ragi	Small millets	Turmeric	Mixed cropping
Marginal Farmer	666	230	165	127	112
Small Farmer	675	235	167	130	130
Medium Farmer	690	240	170	152	133
Total	677	235	167	136	125

Source: Field Survey

From the above Table it is observed that in the case of G.L. Puram mandal farm households the average yield of paddy is estimated at 677 kgs. Similar trend can be noticed in the case of the average yield of small millets and turmeric. In Rabi season the important crop is mixed cropping, the yield of which is 125kgs.

Table -7, Crop Yields of Komarada Mandal farm Households

(Yield per Acre in kgs.)

S.No. farmers	Kharif & Rabi				
	Paddy	Ragi	Small millets	Turmeric	Mixed cropping
Marginal Farmer	695	231	230	180	135
Small Farmer	825	253	255	196	163
Medium Farmer	895	285	270	210	175
Total	805	256	252	195	158

Source: Field Survey

From the above Table it is observed that the average yield of paddy is estimated in case of Komarada mandal farm households recorded at 805kgs. In case of Komarada mandal households the yield of paddy is very high. Similar trend can be noticed in case of the average yield of small millets and turmeric. In Rabi

season the important crop is mixed cropping, the yield of which is 125kgs in case of Komarada mandal tribe. The yield differences among different categories of farmers are striking and it is observed in case of all the crops grown by the farmers. From the above discussion it can be summarized that the ITDAs of Komarada and G.L.Puram agriculture development scheme of development programmes has a positive impact on the yields of different crops of households living in the plain villages, because the households living in the villages in plain areas are able to avail more extent of these programmes.

Findings:

- The information relating to intensity of cropping among the households covered under land development scheme reveal considerable inter farm differences. The intensity of cropping among the G.L. Puram mandal households are relatively low when compared to their counterparts in the plains. Among the G.L. Puram mandal farm households crop intensity is high in the case of marginal farmers. While among Komarada mandal households it has shown a different picture. The above discussion supports the assumption that the land development scheme helped the farmers in plains to cultivate the land more intensively. The intensity of cropping was considerably noticed for all categories of farmers.
- The shifting cultivation practices of the farm households covered under land development programmes reveal that the households reporting shifting cultivation is slowly reducing due to land development programmes. Across mandals there are no much significant differences. Among different categories of farmers shifting cultivation was prevalent mostly among marginal farmers and small farmers in the two mandals covered under the study.
- In the case of land development it is 39.42 percent. Among the three categories of farmers shifting cultivation is comparatively more turn small farmers in both the programmes. From the above discussion it is very clear that land development programmes totally have not succeeded in diverting the tribals from shifting cultivation. However, the point worth noting here is that there is sticking decrease in the number of households reporting shifting cultivation after being benefitted by the land development schemes.
- The crop yield patterns of the households covered under land development programme reveal that in the case of G.L. Puram mandal farm households the average yield of paddy is estimated at 677 kgs. Similar trend can be noticed in the case of the average yield of small millets and turmeric. In Rabi season the important crop is niger seed, the yield of which is 125kgs. The average yield of paddy is estimated in the case of Komarada mandal farm households recorded at 805kgs. In the case of Komarada mandal households the yield of paddy is very high. Similar trend can be noticed in the case of the average yield of small millets and turmeric.
- In Rabi season the important crop is niger seed, the yield of which is 125kgs in the case of Komarada mandal tribe. The yield differences among different categories of farmers are striking and it is observed in the case of all the crops grown by the farmers. The land development programmes has a positive impact on the yields of different crops of households living in the plain villages, because the households living in the villages in plain areas are able to avail more extent of these programmes.

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