



# Food Insecurity, Poverty and Malnutrition among Particularly Vulnerable Tribal Groups in Andhra Pradesh: Role of the Government to Mitigate Problems

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**Abstract:** Tribes in India are considered as the most economically backward and one of the excluded communities, experiencing the problems of impoverishment, deprivation, marginalisation, added with food insecurity and hunger. The problems of food insecurity, poverty and malnutrition among tribals are primarily interconnected with the ecology and physical environment which they inhabit from centuries together and are adapted to it forcefully due to no other alternatives. The newly carved state of Andhra Pradesh consists of 34 tribes with the population of 27,39,919 (5.53 per cent) as per 2011 census, distributed in all the 13 districts varying in number. Large chunk of tribal population in A.P state is concentrated in tribal sub-plan areas of Visakhapatnam, Vizianagaram, Srikakulam, East Godavari, West Godavari, Kurnool, Prakasam, Guntur and Nellore. Based on geographical and ecological background of tribes in Andhra Pradesh state, they have been broadly classified into two categories, viz, 1) Hill tribes and 2) Plain tribes. Out of the total tribes 31 are hill tribes and 3 are plain tribes. The hill tribes' population is mainly found in Eastern Ghats forest environment. Among hill tribes, further there are six tribes considered as Particularly Vulnerable Tribal Groups (PVTGs) namely 1) Chenchu 2) Gadaba 3) Kondh 4) Konda Reddy 5) Savara and 6) Porja. The criteria for classification of these tribes as PVTGs are pre-agricultural stage of economy, very low literacy, stagnant

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or diminishing population and living in most economic backward condition. The severity of social exclusion, vulnerability, food insecurity and poverty are very much seen among PVTGs population inhabiting inaccessible interior forest areas of Eastern Ghats. More than 60 per cent of PVTGs population stand at below poverty line. Majority of its population does not have access to public health and nutritional programmes and are also unable to avail the public distribution system fully due to the location of such facility to far off places and inconvenient working timings of it to them. Once, forest ecology and its flora and fauna were the main sources for their food, subsistence, survival and livelihoods. Over exploitation of forest resources by the external and internal agencies periodically resulted in the depletion of the valuable energy sources and degradation of green vegetation, consequently leading to the extinction of certain plant and animal species, creating food problem among them. At present a section of PVTGs population used to live in degraded forest environment and was struggling for their survival.

This research paper tries to explain the food situation and trace out the interconnectedness between the problems of food insecurity, poverty and malnutrition among PVTG population living in Nallamalai forests, Rampachodavaram agency, Visakha agency and Seethampeta agency of Eastern Ghats forest environment in Andhra Pradesh. It also deals with the relationship between forest ecology and livelihood problems of these tribes. Further, it discusses about the food security, nutrition and health programmes, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGs) of Government and its accessibility, availability and utilisation by different PVTGs in the study area. Lastly the paper explains about the role of government to mitigate these problems, experienced by the PVTG population in the field area and villages. The study population includes Chenchus in Nallamalai forests, Konda Reddis in Rampachodavaram agency, Kondh, Gadaba and Porjas of Visakha agency and Savara of Seethampeta agency<sup>1</sup>. The problem of this research work has been examined from both anthropological and ecological perspectives. Anthropological qualitative and quantitative methods, techniques and approaches were employed in the collection of empirical data in the field area, secondary source published material in the form of books, magazines and research articles have also been also

utilised for writing this research paper. This research paper comprises of both semantic and scientific explanations of empiricism. It is mostly descriptive in nature based on anthropological *etic* and *emic* classifications along with ecological interpretations. It forms the part of the research work on the problem "Social exclusion, inclusion and integration of PVTGs in Andhra Pradesh", Sponsored by ICSSR, New Delhi.

**Keywords:** Food resources, tribal ecology, food insecurity, Particularly Vulnerable Tribal Groups, Eastern Ghats, forest ecology.

## Introduction

Food is the basic need of mankind. The survival of human beings depends on the availability of food resources in the environment, exploitative technologies, consumption pattern and methods of preservation of food material for future use and distribution of surplus food material through market at national and international levels.

Human population is distributed in different ecological and geographical areas of the biosphere. There are several ethnic groups across the globe inhabiting different climatic and ecological conditions. The aboriginals (tribes) are one of the human groups who still mostly live in geographical isolation and largely subsist on the food material readily available in their physical environment. Still they are considered as the most economically backward and subsist with scanty food resources and depend largely on their own indigenous methods and technologies in exploitation, consumption and preservation of food material. They still largely follow their traditional methods of cooking, eating and preservations of various kinds of food materials which they produce and collect or gather in their physical environment and ecology of flora and fauna. So far they do not have sufficient knowledge in modern methods of preservation of food material in order to minimise its wastage and also ignorant about the nutritive values of foods which they produce and gather in their natural environment. Their cultural practices of totemism, food taboos and avoidances are also resulting in the problem of malnutrition among them to some extent and also loss of some quantity of nutritive value food material either produced or gathered. Majority of tribal population are not meeting their subsistence requirement and are unable to consume the required amount of calories of food due to scanty energy resources as well as livelihood resources in the nature they dwell in. Hence, a section of tribal population

is encountering the problems of poverty, food insecurity and high incidence of malnutrition, morbidity and mortality. The Government initiated, National Food security, through public distribution system and nutritional programmes are also unable to elevate the nutritional and health status, of those who inhabit different tribal pockets of India. Food systems and food cultures also vary from one human group to another primarily due to habitation, climatic, ecological and geographical variations. Anthropologists try to focus their attention to document food cultures of different human populations including aboriginals.

As per the scheme of development of PVTGs by the Government of India, "Priority is accorded for their protection and improvement in terms of the social indicators like livelihood, health, nutrition and education so as to decrease their vulnerability" (Ministry of Tribal Affairs 2015). Focus on health and nutrition is part of the scheme which is associated with the problems of food insecurity and malnutrition. As per the Research and Development Division of Tribal Welfare Department 2017 "due to food insecurity and malnutrition, 90 per cent of the tribal population is anaemic (i.e, > 12 per cent mg/dl), among whom 27 per cent of tribal women and children are severely anaemic (i.e < 7 mg / dl). The problem of critical anaemia is causing sudden and unexpected death of children due to inadequate oxygen supply to the brain by the heart and poor blood circulation".

The Particularly Vulnerable Tribal Groups are facing some serious problems like lack of basic facilities, acute shortage of food, housing, development transition, drinking water, acute poverty, good medical facilities, lack of essential agricultural technology, etc. (Nanjunda D.C 2019, P 213-214). The fate of *Adivasis* and forest are closely tied in the **Attapady** hills of Kerala, part of the Western Ghats and a bio-diversity rich region. The recently settled agriculturists have been facing malnutrition and infant mortality and their transition to cash crops has only adversely impacted their agriculture and thereby food security (Deepa Kozhisseri 2019, P 223).

India represents 635 tribes with the population of 10,42,81,034 (8.6 per cent) as per 2011 census, distributed in almost all states except Punjab and Hariyana, large chunk of tribal population in India is concentrated in forests, mountains, deserts and islands, sustaining with limited food resources. In general the tribal economy is considered as agro-forest based and subsistence economy. Out of the total tribes in India, 75 have been classified as particularly Vulnerable Tribal Groups (PVTGs) based on the criteria of pre-agricultural stage of economy, very low literacy, stagnant or diminishing population, living in most economically backward conditions. In general, the PVTG populations

are struggling hard to eke out their livelihood and encounter the problems of food insecurity, poverty and malnutrition. All these problems are closely associated with the ecology in which they live from centuries together and its exploitative technologies mainly in food production and food material collection or gathering (foraging). Even today, the foragers are seen among certain PVTGs specifically living in forests, mountains, deserts and islands. The foraging tribal communities primarily depend on its physical environment forcefully to meet their subsistence (food) requirement. The problem of food insecurity very much prevails in tribal population more specifically among PVTGs of different tribal pockets of India. Poverty and food insecurity are the root causes for high incidence of morbidity, mortality and malnutrition among aboriginal people in India. These are the major causes for underdevelopment among many tribes including PVTGs in India. In development perspective, the tribal population stands at the bottom of the human development index.

### **Tribal Population in Andhra Pradesh**

The newly carved state of Andhra Pradesh consists of 34 tribes with the population of 27,39,919 (5.53 per cent) as per 2011 census. Tribal population in **Andhra Pradesh** state is distributed in all the 13 districts, varied in number. Large chunk of tribal population in the state is concentrated in tribal sub-plan areas of Visakhapatnam, Srikakulam, Vizianagaram, East Godavari, West Godavari, Kurnool, Prakasam, Guntur and Nellore. Most of the tribal habitats are located in Eastern Ghats forest environment where the hill tribes and particularly vulnerable tribal groups live. These two categories of tribal groups numbered about 31, adapted to the forest environment of Eastern Ghats have established symbiotic relationship with the forests since age immemorial. The population of hill tribes including PVTGs draw their food material mostly from the forest flora and fauna in addition to agriculture. The rest three plain tribes namely Lambada / Sugali, Yerukula and Yanadi, their population is distributed in Deccan plateau region of rural village economy, maintaining symbiotic relationship with the castes and integrated into rural villages. The castes and the plain tribes population directly or indirectly depend on agricultural land owning traditional peasant castes for meeting their food requirements. In general, the problems of food insecurity, poverty and malnutrition prevail among the tribal populations belonging to Chenchu, Gadaba, Kondh, Konda Reddy, Konda Savara and Porja tribes. As per 2011 census the PVTG population in **Andhra Pradesh** state is 4,52,456 (16.51 ). PVTG population and predominant place of habitation is shown in the below Table 1.

**Table 1: PVTG Population in Andhra Pradesh as per 2011 Census**

S.No	Name of the Tribe	Population	% to the Total PVTG population	% to the Total Tribal Population	Predominant Place of Habitation
1	Chenchu	47315	10.46	1.73	Prakasam, Kurnool and Guntur
2	Gadaba	37798	8.35	1.38	Srikakulam, Vizianagaram and Visakhapatnam
3	Kondh	102378	22.63	3.74	Visakhapatnam
4	Konda Reddy	90937	20.10	3.32	East Godavari, West Godavari
5	Savara	137613	30.41	5.02	Srikakulam, Vizianagaram and Visakhapatnam
6	Porja	36145	8.05	1.32	Srikakulam, Vizianagaram and Visakhapatnam
	Total	452456	100.00	16.51	

Source: PVTGs Population as per Census 2011

A large majority of its population is found to live in resources scanty degraded forest environment of hill tops and slopes, invariably practicing shifting (*podu*) and Terrace cultivation apart from non-timber forest produce (NTFP) collection in-order to meet their subsistence requirement. The available food resources and natural resources in their habitats are not sufficient to meet the food requirement of its population throughout the calendar year. So a section of its population is starving for food at least three to four months in a calendar year. To meet their subsistence requirement they are forced to borrow loan from the non-tribal moneylenders and traders with high rate of interest and fall into the debt trap. In a tribal family the debt amount perpetuates generations together due to low annual income from all resources put together. In regard to the problem of indebtedness among different tribes (including PVTGs) in India there is a saying, "a tribal is born in debt, lives in debt and finally dies in debt".

Lack of proper livelihood resources resulted in the problem of food insecurity, economic deprivation, impoverishment (poverty), indebtedness and marginalisation of some sections of its population. All these problems are considered as causative for the record of high incidence of malnutrition, morbidity and malnutrition among PVTGs in specific and other tribes in general. Due to continuous suffering from these problems by some sections

of PVTG populations and other tribal populations in Eastern Ghats forest environment of Andhra Pradesh state leads to severity of social exclusion and in turn excluding them from participating fully in the ongoing development process of the region, state and nation. Food security of any human population including the PVTG population is closely associated with eco- technological and cultural factors as well as the food policies of the state and the central Government. Culturally and ecologically linked food systems of different tribes generally vary from one another. The following few pages discuss about the food systems of six PVTGs namely Chenchu, Gadaba, Kondh, Konda Reddy, Konda Savara and Porja along with its ecological, cultural and ethnographic back ground in brief.

### Chenchu

It is one of the Particularly Vulnerable Tribal Groups in Andhra Pradesh, and in tradition referred to as a food gathering tribe. As per 2011 census the population size of this tribe is 47,315 distributed in Kurnool, Prakasam and Guntur districts. A large chunk of population is concentrated in Nallamalai forests. This tribe has the sub-divisions like 1) Konda Chenchu, 2) Uru Chenchu 3) Yanadi Chenchu 4) Bonta or Botwa Chenchu 5) Chenchu Dasari 6) Koya Chenchu and 7) Krishna Chenchu. Most of its population belongs to Konda Chenchu or *Adavai Chenchu*. The habitats of this sub-group are covered by the thick forests of Nallamalai which contain varied flora and fauna. The Nallamalais area, part of the Eastern Ghats hills or forest eco system, which have been penetrated by the rivers like the Godavari and Krishna and some of their tributaries. The livelihoods of Chenchus are dependent on the forest ecology flora and fauna. The dwelling habitat of Chenchu is locally referred to as *Gudem*, which consists of very small number of households ranging from 10-20; all the residents of a gudem belong to a single kindred group. In the past they got their food material from the forest flora and fauna by means of hunting and gathering. Even today, the foraging activity is seen among the *Konda* and or *Adavai Chenchu*. In 1980s agriculture was introduced in some of Chenchu settlements by the I.T.D.A, Sundipenta, even then, they drew a major portion of food materials from the forests either by hunting or gathering. The egalitarian feature was very much attached with this foraging community. Through this practice all the members of a gudem equally shared the food material either collected in the form of edible leaves, seeds, nuts, fruits honey roots and tubers or by small hunting games of wild meat. Gum collection is another source of income to the Chenchu, forest labour and agricultural

labour are secondary sources of income to many Chenchu families. Now the Chenchus are in transitional stage from food gathering to food production. The food material collected and produced by the Chenchus are not sufficient to meet their subsistence requirement and so they are forced to depend on the public distribution system of G.C.C Domestic Requirement Depots (Girijan Cooperative Corporation D.R. Depots). Even then, food insecurity still prevails in majority of the Chenchu gudems in Nallamalai forests, falls in Kurnool, Prakasa, and Guntur districts.

### **Gadaba**

This tribe population is distributed in Visakhapatnam, Vizianagaram and Srikakulam districts of Andhra Pradesh. The Gadaba population as per 2011 census is 37,798. Majority of the Gadaba habitats are located in the valleys of Eastern Ghats forest environment. The economy of this tribe is agro- forest based and largely considered as subsistence economy. It has sub-divisions like Bodo, Parenga, Ollero, Koloj or Porja, Katheri, Kapu and Kaspā. Traditionally Gadabas were considered as palanquin bearers, who worked for the former Zamindars of Madugula, Golugonda and Kurupam. Gadaba population is also found in the Non-Scheduled areas of north eastern coastal Andhra Pradesh. The Gadabas in the forest zones practice the crude method of *Podu* (shifting) cultivation and rear sheep and goats. They also collect the Non-Timber Forest Produce (NTFP). The food resources and material available in their habitats are not sufficient to meet their subsistence requirement throughout the calendar year.

### **Kondh**

In Andhra Pradesh, Kondhs are mainly concentrated in Visakhapatnam district, distributed in all the eleven tribal mandals of tribal sub-plan area of Paderu. Their habitats are mostly found on the hill tops and slopes of the interior of forests of Eastern Ghats. The Kondh habitats are composed of rugged hills, uninhabited Jungles and deep water courses, surrounded by pathless wilderness forests or valleys and are pervaded by a pestilential atmosphere. The climate of the Kondh territories was highly insalubrious. The economy of Kondhs is agro-forest based and largely considered as subsistence economy. They also rear pigs and fowls and draw most of their food material from shifting (*podu*) cultivation and gathering of edible fruits, leaves, seeds, nuts, tubers and roots. The available food materials in their habitats are not meeting the subsistence requirement of its entire population throughout the calendar year. Hence, they



are forced to depend on the public distribution system of G.C.C, D.R. Depots. The problem of food insecurity very much prevails among them. The food system of Kondh tribe is mainly agro-forest based and supplemented with the livestock (cattle, fowls and pigs).

### **Konda Reddy**

It is one of the particularly vulnerable tribal groups in Andhra Pradesh. As per 2011 census the population of this tribe is 91,937, predominantly found in East Godavari and West Godavari districts. They are mainly dependent on the forest, land and water resources for their livelihood and subsistence purposes. The original habitats of this tribe are mostly found in Rampachodavaram and Ramchandrapuram agency areas, a few Konda Reddy settlements are found on the banks of Godavari River. The Konda Reddy people residing on the banks of Godavari River catch the fish and use it for their own consumption purpose only. Almost all the Konda Reddy families practice both shifting (*podu*) and settled cultivation and Non-Timber Forest Produce (NTFP) collection. A section of Konda Reddy people were displaced and rehabilitated due to the construction of Bhupathipalem and Mausirimilli medium irrigation projects and also Polavaram major irrigation dam which is under construction (Subramanyam V & B. Veerabadrudu 2012). The available food resources in their habitats are not meeting the food requirements of the entire population. Food scarcity and food insecurity problems very much prevails among the Konda Reddy families which were displaced and rehabilitated by the construction of medium and major irrigation projects. Literally displaced Konda Reddy people lost their livelihood and were forced to change their traditional occupation of agriculture and collection of NTFP items. They have taken up agricultural labour employment and daily wage employment in the construction activities. They are facing the problems of impoverishment, economic deprivation, marginalisation and social exclusion. The severity of food insecurity is seen among the Konda Reddy families inhabiting the hill tops of interior forests, which largely depend on shifting cultivation (*podu*) and NTFP collection.

### **Porja**

It is one of the particularly vulnerable tribal groups in Andhra Pradesh. As per 2011 census the population of this tribe is 36145. The population of this tribe is mostly concentrated in Visakha agency area of Paderu ITDA. The economy of this tribe is agro-forest based, and subsistence economy. They derive most of their food material from shifting (*podu*) cultivation and minor forest produce

collection. The Porja families also rear cattle, fowls, and pigs. Food insecurity very much prevails in the habitats of Porja. Majority of the Porja families are facing the problems of poverty and food insecurity. Still Porjas are largely dependent on the forest resources. The food system of Porjas is agro-forest based and linked with the forest ecosystem.

## Savara

This tribal population is distributed in Parvathipuram and Seethampeta agency areas of Vizianagaram and Srikakulam districts respectively. As per 2011 census Savara population is 137613. Once, Savaras were horticulturists. Even today most of the Savaras habitats are surrounded by cashew gardens accompanied with pineapple plantations. Konda Savaras inhabiting hill tops and slopes are practicing shifting (*podu*) cultivation and collect Non-Timber Forest Produce (NTFP) items. The Kapu Savaras inhabiting the valleys and plain areas are practicing settled cultivation. Almost all the Savara families rear cattle, fowls and pigs. The severity of food insecurity and poverty is seen among Konda Savaras when compared with the Kapu Savaras. The food system of this tribe is agro-forest based and associated with the forest ecology, substituted by the cash economy of horticulture.

## Food Types

The sources of food materials have been broadly classified into two categories viz, 1) plant foods and 2) animal foods. The plant foods are available in the form of cereals; pulses oil seeds, nuts, fruits, leafy greens, roots, tubers, mushrooms, spices, etc. The animal foods are available in the form of meat, chicken, beef, pork, fish, eggs, milk and milk products (butter, ghee, cheese, curd, etc). Further, foods are classified as cooked, uncooked, stored and staled. Cooked food again has been classified as *pucca* and *kachcha*. The food prepared with ghee or oil is considered as *pucca* food and the food prepared with water is known as *kachcha*. Certain special foods are known as ritual, ceremonial, religious and festival foods which have cultural and religious importance. In addition to these, famine foods have also been recorded in continuously drought prone areas including certain tribal areas of Andhra Pradesh. Usually a food linkage in between the living and non-living organisms exists in the food web of eco-niche and it is applicable to a particular human habitat or tribal habitat. The eating habit of plant and animal foods by different animals and humans are referred to into three categories such as 1) Herbivores species 2) Carnivores species and 3) Omnivores species. In addition to these certain

species eat dead materials which are known as detritus. In a caste based Indian society, commensal restrictions exist in between ritually pure and impure castes and also in between the high and low castes. Generally ritually pure and high castes accept only *pucca* and uncooked food items from the ritually impure and low castes. Commensality is one of the criteria for assessing the levels of social exclusion and severity of social exclusion among the excluded social groups or communities in Indian society. Food culture and behaviour also varies from one human group to another including different castes and tribes in India. Food habits of the tribal communities (including PVTGs) in Andhra Pradesh primarily depend upon the factors of ecology and economy and are also closely associated with the livelihood sources. The food habits, practices, consumption pattern and nutritional deficiencies of PVTGs are linked with livelihood sources and food resources availability in the ecology, where these tribes dwell and also their knowledge of resources exploitative technology.

### **Anthropology and Food Cultures**

Anthropologists focus their attention to study food cultures of different ethnic groups in the human world and try to document it through empirical field work and observations. Cultural explanations in regard to food habits of human beings or ethnic groups by anthropologists have been mentioned below very briefly with two earlier studies as relevant references in this context.

The importance of cultural components of food behaviour is an area that is much in need of encouragement and expansion. The cultural influence on food preferences, beliefs about the properties of food and taboos and the social role of food in the family and community can all have important effects on food needs and provision (Attkinson 1992). The influence of technology on food habits is also strong. For instance, presence or absence of efficient means for obtaining, transporting, processing, storing and preparing food has a significant effect upon nutrient content and consequently upon nutritional status. The cultural aspects of human nutritional problems gained much importance in recent times. The cultural anthropologists who focus their attention on this problem mainly concentrate to study the interrelationship between diet and culture and their mutual influence upon one another (Subramanyam 1997). The nutritional problems can be derived from inborn errors of metabolism or from cultural and or environmental factors. Nutritional practices are largely determined by basic customs which are interrelated with others aspects of the social organisation, such as basic economy (Whiting 1958).

## Food Habits, Consumption Pattern and Deficiencies

The staple food of all these tribes is *Ambali* (gruel), which is made up of Ragi or Jowar flour. In recent times majority of the PVTG people eat rice at least once in day because of its availability through GCC, D.R. Depots. They are non-vegetarians. The Kondh, Gadaba, Porja, Konda Reddy and Konda Savara tribes take beef and pork, whereas the Chenchu tribe abstain from eating beef and pork, and they consume wild meat of small hunting game. Almost all the PVTGs families take meat, chicken, eggs, fish and dry fish. The Kondh, and Porja tribes inhabiting in Visakha agency area, eat dead animal meat (carrion) and also anthrax affected animal flesh due to food scarcity, in turn they are infected with Anthrax disease. Several such cases were recorded in Munchingput mandal of Paderu ITDA, Visakhapatnam district. The forest dwelling PVTGs invariably consume the edible leaves, fruits, roots, tubers, seeds and nuts and also mushrooms.

In the vegetation diet, they make curries with seasonally available vegetable like pumpkin, water gourd, beans, brinjal, chillies, water gourd, tomato, pumpkin and drumstick. They prepare chatnies (sauces) with the inflorescence of tamarind, tamarind fruit, *konkadi koora* and red gram. They consume the red gram dal (pulse) in liquid cooked form, which is mixed with the rice. They prepare *Rasam* with the boiled tamarind mixed water, which is added to the rice. They use *olisulu* (niger seed) oil, palm oil and ground nut oil as cooking medium. The oil consumption is very less among all the tribes. The Chenchus in Nallamalai forest occasionally collect bamboo rice and cook and consume it. They also collect the tendered bamboo shoots and make its curry and then consume it quite often. The consumption levels of vegetables, pulses and leafy vegetables among all the PVTGs is very less when compared to the advanced tribes like Bagata, Valmiki, Konda Kapu and Jatapu tribes inhabiting the same forest eco system of Eastern Ghats in Andhra Pradesh.

Both men and women smoke cigars (loose tobacco) in all PVTGs. The Chenchu women chew betel leaves and nuts along with loose tobacco. Alcoholism is too common among the PVTG people. Even the PVTG women take the intoxicating drinks like *Sara* (arrack), *Jeelugu Kallu* (Sago Palm extract), *Kallu* (palm extract) and Maddi (rice beer), especially during socio-ceremonial and festival occasions. In the past each tribal family used to grow one or two *Jeelugu* (sago palm) plants for extracting toddy (*kallu*). The Konda Reddy tribe in Rampachodavaram and Ramachandrapuram, areas grow palm trees for extracting toddy and eating its fruits and tendered roots (Tegalu). Generally the women are restrained from taking alcoholic beverages during

their pregnancy and also it is prohibited to the children below six years of age. Generally, after the birth of a child the lactating mother do not consume pumpkin, onion, egg, meat and fish at least for a period of six months. It is interesting to note that the restrictions of certain food items like egg, meat and fish to women during pre and post-natal periods has no scientific reason. It is a well known fact that these food items (egg, meat and fish) have much nutritive value which enhances the health status of both pregnant women and lactating mothers.

It is noted among the PVTG people that usually they avoid (taboo) taking their concerned totemic plants and animals foods. They do not consume the sacrificial animal blood. They offer it to the supernatural beings. The intake of protein food items is very less in almost all the six PVTGs. They consume more carbohydrates when compared with that of vitamin containing food items. And also the entire population does not get at least the minimum required calories of food during the period of July– September in every calendar year, mostly agricultural lean periods. The minimum required calories of food for an individual in a day is calculated around 2300 calories. But majority of PVTG people are unable to take the required calories of food material due to food scarcity and lack of sufficient natural resources and energy base in the ecology of their habitation where they are living from centuries together.

### **Food Insecurity, Nutritional Deficiencies and Disorders**

The calorie intake of particularly vulnerable tribal groups living in thick forest areas of Eastern Ghats in Andhra Pradesh is deficient, only 6.74 per cent as compared to the recommended dietary allowances (RDA). The most severe deficiency in calories was found in almost half of the tribal children and lactating mothers. The Kondh food intake is deficient by 20per cent in protein content compared to RDA. Vitamin 'A' and Vitamin 'B' deficiencies are also more in the PVTGs population. The original influence among the forest dwelling tribes (including PVTGs) is only a myth and the modernisation process seems to have added miseries to the tribals, as it is reflected in the nutritional deficiencies and nutritional diseases associated with these deficiencies. Food insecurity and poverty are the root causes for the record of high incidence of malnutrition, morbidity and mortality among the tribal population (including PVTGs) in different tribal pockets of India (Subramanyam 1997).

The tribal people (including PVTGs) generally observe food taboos and restrictions during certain periods and occasions which have adverse effect on their health and nutritional status. Not only the food habits and practices but

also vitamin and protein deficiencies in food items are also causing malnutrition. And also certain diseases like night blindness, itching skin, beri beri, nervous system deterioration, cataracts, diarrhoea, dermatitis, anaemia, bleeding gums and loose teeth, scabies are common among the tribal population (including PVTGs), which are associated with the Vitamin deficiencies. Most of the diseases which they get are water borne and nutritional deficiencies. Many PVTG settlements are lacking clean drinking water, and sanitation facilities. Many PVTG households are not having toilet and separate bath room facilities, and most of its people live under unhygienic conditions. Majority of them drink the polluted stream and spring water without any kind of hesitation. The PVTGs do not have the knowledge to store or preserve the food items. Sometimes they are forced to eat stale food items due to lack of knowledge in storage or preservation. They do not know the nutritive value of certain food items which they produce and gather in the forest environment.

### **Role of Government in Providing Food Security and Enhancement of Nutritional Status**

Public distribution system through Domestic Requirements Depots (DR Depots) of Girijan Cooperative Society is considered as one of the measures to ensure food security among the tribals (including PVTGs). Food for work of MGNREGS is another measure of food security among the tribal (including PVTGs), which is also accompanied by the poverty alleviation programmes of Integrated Tribal Development Agency (ITDA) since the Fifth five year plan period onwards. Introduction of Mid-Day-Meal scheme at school education level is another measure to ensure food security and enhance nutritional status among tribal school going children. Establishment of Nutritional Rehabilitation Centres (NRC) of Anganwadi scheme in tribal areas is another measure of the government to provide food security and enhance nutritional status among tribal children, pregnant women and lactating mothers. The Anganwadi centres are actually functioning under the Integrated Child Development Scheme (ICDS) project management and administration. The aims of this project are 1) to provide nutritional rehabilitation to the target group viz, severely malnourished (II and IV grades) children below 3 years and 2) obstetrical risk women i.e those with toxemia, severe anaemia and other forms of malnutrition deficiencies.

The main purpose of NRC will be to provide integrated nutrition and health services to at risk mother and children (below 3 years) who are severely malnourished and for whom mere supplementary nutrition is not effective. It

also provides diet, medical treatment and NHE (Nutritional Health Education) to the beneficiaries. The objectives of NRC are 1) to devise simple effective, less expensive dietary recipes for treatment of nutritional problems using locally available foods, 2) to demonstrate to mothers the dramatic improvement in malnourished children when they are fed right quantity and quality of food and at the right frequency, 3) to bring about everlasting behavioural change among mothers regarding feeding of children, 4) to impart skill to another in making use of locally available food to prevent malnutrition in children and in the family. The work organisation at Nutrition Rehabilitation Centre (NRC) would mainly contain three aspects such as (i) Daily routine (ii) Assessment of nutritional status, and (iii) Nutritional education. At present it is functioning as per the National Food Security Act through Anganwadi scheme. Community health worker's scheme (inclusive ICDS Anganwadi and ASHA worker) are considered as a measure of government mitigation to solve the problems of malnutrition and food insecurity among tribes including Particularly Vulnerable Tribal Groups (Subramanyam 2020, P:34).

Almost all the tribal habitats (including PVTGs) now have the Anganwadi School / centres facility and it is managed by an Anganwadi worker (teacher) and helper. It fulfils all the objectives and aspects of nutritional rehabilitation centre (NRC) and the stake holders of this centre are pregnant women, lactating mothers and children in the age group of 0-6 years. In addition to the nutritional programmes, now it is also providing pre-school education to the children in the age group of 3-6 years, (kindergarden school education).

## **Conclusion**

The Particularly Vulnerable Tribal Groups in Andhra Pradesh are mainly distributed in the tribal sub-plan areas of Visakhapatnam, Vizianagaram, Srikakulam, East Godavari, West Godavari, Kurnool, Prakasam, and Guntur districts. In general the PVTG population stands at the bottom of the human development index as well as overall national development index. Underdevelopment among PVTG population is primarily due to lack of livelihood resources and food resources in their habitats. The food systems of particularly vulnerable tribal groups are linked with the habitat, ecology, economy and livelihood resources. Almost all the PVTG habitats are located in the Eastern Ghats forest ecology. Earlier, the PVTGs population were mainly depended on the forest resources for their livelihood. With the introduction of agriculture into the tribal areas, their economy is now largely considered as agro-forest based and subsistence economy. The flora and fauna of forest,

land, and livestock are the major food resources for the tribals, but in actual practice the food intake of tribals changes considerably due to various factors. The declaration of forest areas around tribal habitat as reserve forest actually resulted in removing shrub jungles for growing commercial forestry. This in turn resulted in reducing the food availability in terms of roots, tubers, seeds, nuts, fruits, etc. Once, the Chenchus in Nallamalai forest were totally depended on foraging activity in meeting their subsistence requirement. Now slowly they are adopting agriculture in addition to food gathering and hunting. The other PVTGs like Gadaba, Kondh, Konda Reddy, Porja and Savara are also still dependent on the forest ecology and collect Non-Timber Forest Produce items in addition to agriculture by means of shifting (*podu*), settled, and terrace cultivation. The Konda Reddies inhabiting the banks of Godavari catch the fish exclusively for their consumption purpose only.

It is noted that the tribal economy has changed from food collection to producing and gathering of minor forest produce for commercial purposes, the cash economy has also started playing an important role. The outside fruits had to be imported into tribal areas; in the initial stage the merchants who brought these fruits and also some outside material started exploiting the local tribals (including PVTGs) in the areas of marketing and money lending. Moreover, the outside foods are always costly therefore the government through its agencies like Girijan Cooperative Corporation started to supply the daily requirements to tribals through DR Depots. In addition to it they also sell their surplus produce and buy the essential commodities in the weekly markets. This has further increased the dependence of tribals on outside market to meet their food requirement. Still a few PVTG families are not using the public distribution system fully due to ecological and geographical constraints and inconvenient working timings of DR Depots. Majority of the PVTG families are availing the other food security programmes of government such as mid day meal scheme of schools, nutritional programmes of ICDS through Anganwadi and food for work programme of MGNREGS. Even then, the problem of food insecurity, poverty and malnutrition still prevails among PVTG population due to unemployment and livelihood problems.

In general, tribal ecology is known as 'ecology of malnutrition'. The tribal habitat in Eastern Ghats forest environment is considered as 'endemic zone for malaria'. The nutritional deficiencies and disorders among the PVTGs population are closely associated with their cultural practices of food habits, taboos and avoidances. With the introduction of cash economy and marketing system into the tribal areas they are forced to depend on the outside agencies



for various purposes including meeting their food requirement. In this process the tribal became part of total economy of the state and he being at receiving end was always a loser. The pressure of high cost economy and depletion of natural food resources has ultimately resulted in lesser intake of food and consequent malnutrition. Especially the shifting cultivation (*podu*) ecology of the PVTGs like Kondh, Gadaba, Konda Reddy, Savara and Porja is vulnerable and prone to high incidence of malnutrition, morbidity and mortality. More than 60 per cent of PVTG population stands at below poverty line, main cause for their under development. The problem of poverty is associated with food insecurity and malnutrition. Geographical isolation and segregation are the mechanism of social exclusion among tribal communities including PVTGs. Impoverishment, economic deprivation, marginalisation, food insecurity is seen among the vulnerable tribal communities. All these features of exclusion are seen in almost all the socially excluded communities in India, but the severity of social exclusion and levels of social exclusion varies from one community to another, it is more so with the tribal communities. A separate food policy is needed to mitigate the problem among tribal communities in different tribal pockets of India. Food security programmes need to be strengthened in the habitats of PVTGs where the problem of food scarcity and insecurity still persists. Similarly poverty alleviation and nutritional programmes need to be strengthened by monitoring them properly. Need and right based approaches to be strictly followed by the tribal development administration, including Integrated Tribal Development Agency, Girijan Cooperative Corporation, Tribal Farmers, and Agricultural Development (TRIFAD). All these agencies should pay concerted effort in order to design development policy planning and its implementation for the benefit of the poor tribals (including PVTGs) and to remove them under the *clux* of livelihood and unemployment problems. This kind of strategy will definitely ensure food security and reduce absolute poverty, and also enhance nutritional and health status among the vulnerable tribal groups. More focus is still needed from the government towards the PVTG populations who are still experiencing the severity of exclusion and are considered as underdeveloped.

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