Drought Mitigation in Tamil Nadu

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Sustained and focused efforts have to be made by the Tamil Nadu state government to provide relief and rehabilitation to the drought affected people of the state.

Due to the failure of the north-east monsoon in December 2013, Tamil Nadu is witnessing drought like conditions this year, leading to poor agricultural productivity, rural distress, acute shortage of drinking water and fodder. For three consecutive years 2011, 2012 and 2013, the state has been reeling under drought, having received below normal rainfall. This summer (2014), the situation is pretty alarming in the state. It is facing an acute drinking water crisis, leading to protests all over the state. Also the farmers’ associations and left parties have been demanding that the government declares the state as drought-hit. The state administration is finding it difficult to tackle the situation.

The state government has sanctioned Rs 681 crores in the budget 2014-2015 to address the drinking water problem alone. The chief secretary of the state convened a district collectors’ meeting with the secretaries of finance and revenue during the first week of May 2014 to take stock of water requirements and other needs. Subsequently, the chief minister also convened a meeting with senior ministers and officials to ensure the supply of drinking water. Unless the water scarcity is addressed on a war footing, a serious drinking water crisis is imminent in the state.

As per the warnings of the Inter-governmental Panel on Climate Change (IPCC), the El Nino effect over the Indian subcontinent will be severe this year. Already, unusual torrential rain and severe hailstorms during the months of February and March this year, have affected several districts in six north and central Indian states. More than 5 million ha of ready to be harvested crop has been devastated, fodder and hay stock been affected, many dwelling units damaged, fruit yielding trees have been uprooted and more than 100 farmers[1] have committed suicide (for state wise survey see, Pallavi and Others: 2014). It can be deduced that many of the droughts in Indian subcontinent have happened when there was an El Nino that led to a deficit in monsoon rains [from data over 125 (1880-2005) years]. Expecting poor rainfall from the southwest monsoon the drought mitigation plans have been prepared for the states from north-west and central India (Parsai: 2014).
Except Maharashtra and Rajasthan, no state has announced any relief for affected farmers. Even the proposed compensation package varies among different states. Natural calamities like drought should be dealt with in a comprehensive and holistic manner for ensuring economic security and livelihood of the people.

A drought like situation adds to the woes of a water-starved state like Tamil Nadu. The state government declared the state as drought hit in 2012-2013, and excluding Chennai, all other districts were provided with drought relief. Around 21.42 lakh farmers were given drought relief of Rs 2,022 crore (Rs 1,377 crore by the state and Rs 645 crore from the union government).

Though a good northeast monsoon is crucial for Tamil Nadu, the south-west monsoon facilitates the Cauvery delta farmers in eight districts of the state to grow paddy. Due to failure of both the south-west and north-east moons in 2013, drought like conditions persist this year. A delayed south-west monsoon this year coupled with the already existing drought like conditions is likely to trigger tension between Karnataka and Tamil Nadu over sharing of the Cauvery waters. The Tamil Nadu chief minister personally met the prime minister on 3 June 2014 and demanded that the Cauvery Water Regulatory Committee and Cauvery Management Board be constituted. Later an all party delegation from Karnataka met the prime minister and requested not to accede to the demands of the Tamil Nadu chief minister.

**Drought, Farming and Distress**

Drought has not only affected crop husbandry adversely, but has also upset rural livelihoods in Tamil Nadu. For want of fodder, cattle grazers had to take the unusual step of cutting palmyra leaves to feed their animals. Surprisingly, even these sturdy, deep-rooted and drought-resistant trees have been withering. Around 7,000 thirty-year-old Palmyra trees have completely withered due to drought in Konganapuram and Edapaddy blocks in Salem district in the last one year. Personal visit to these areas show that tree climbers (toddy tappers) and tree owners of these groves have been left with nothing, and the livelihood of palm leaf basket and mat weavers and palm sugar makers (majority are women) has been affected. Unlike coconut palms, Palmyra do not have crop insurance cover.

Areca nut, another perennial crop, is also under threat in the villages of Attur taluk–Thammampatti, Veeraganur, and Ulipuram–in the drought prone district of Salem. This taluk is known for cultivating cash crops like betel wine, papaya, areca nut and sugarcane, as this region is endowed with rich fertile soil and abundant groundwater. Located at the foot of Servarayan hills, this area has been ravaged by drought. Due to poor rainfall in the last two years, the ground water table has been receding and wells have been drying up in the area as revealed by local progressive farmers.

Areca plantations and papaya gardens have been withering in the area for want of water during this summer(2014). About 50,000 saplings of the high-yielding variety of “red lady”
papaya, grown on 230 acres in Pethanaickkanpalayam, Manivzhundhan and Kallanatham clusters in Salem district and neighbouring areas, have already withered this year. To irrigate their crops, farmers installed subsidised drip irrigation systems, but the availability of water was insufficient to operate them. Consequently, this year more than 6,000 acres of areca palms and 50 acres of papaya gardens withered and the farmers have applied for compensation.

In 2012, the situation was not good in districts like Perambalur, Ariyalur, Pudukottai and Ramanathapuram, and the farmers demanded that their respective districts be declared drought-hit. Farmers suggested that clusters of villages in Karambakudi and Neduvasal in Pudukottai district be included in the delta region so that they get concessions and priority in obtaining power connections to operate irrigation pumpsets.

Since 2012, with scantly rainfall, the situation has got worse with each passing year. The situation is grim in non-delta, semi-arid drought prone districts like Virudhunagar, Tuticorin, Dindigul, Dharmapuri, Krishnagiri, Thiruvannamalai and Madurai, and people have migrated to greener pastures like Bangalore, Tiruppur, Coimbatore and Chennai in search of employment in the last couple of years.

The poor rainfall has not spared horticultural crops like acid lime and jack fruit either. The drought has not only affected the production of these crops, but also many trees have withered for want of sufficient water this year. Growers in clusters of Vadagadu and nearby villages in Alangudi taluk of Pudukottai district used precision farming for irrigating the crops. Despite that, water in bore wells was not sufficient, and more than 1,900 grown fruit bearing jack fruit trees worth of crores of rupees dried up and died in 2014. The situation is no different in mango growing regions of Dharmapuri, Krishnagiri and Salem, where orchards growing premium varieties like Malgoa and Imambasanth have been affected. Farmers are reluctant to plant more mango saplings, fearing the onslaught of yet another drought.

During the summer of 2013, many coconut palms withered on the banks of river Cauvery. Mature nut yielding coconut palm groves are found on either side (35 kms stretch) of the rivers Cauvery and Colroon from Musiri to Srirangam in Tiruchirappalli delta district. Sadly, low inflows to the river and unmindful extraction of sand from the river bed resulted in lowering of the water table, and many trees unable to withstand the drought withered. Many farmers did not even cut these dead coconut trees as they were strongly attached to them.

Drought has also affected vegetable crops. Cost escalation due to extra power required for drawing water from deep wells and increasing labour costs have resulted in spiraling prices of vegetables. Erratic electricity supply has also put the farmers in a spot. Two months ago one kg of tomato was sold for Rs 2 and now due to the drought, the supply has dropped and prices have shot up to Rs 15 per kg in Thalaivasall region.
Despite these hardships, farmers have used drip irrigation to tide over the water crisis to raise vegetables and other short term crops in select areas. The highly subsidised drip irrigation system, which saves considerable water and labour is slowly gaining popularity among farmers. Resource poor marginal farmers have installed government subsidised drip irrigation channels to grow vegetables on 80 ha in water starved[5] Panamarathupatti village near Salem (Kalaikathir, 28 April 2014).

The state has 3.1 lakh bore wells and 15.66 lakh open wells, which are used for extracting ground water, and more than 55% of the gross cropped area is irrigated (GOTN:2013). With formal credit and free power supply available liberally, pump sets are increasingly being used. This has resulted in a non-judicious use of ground water on a unsustainable basis. As the Sivaraman Committee observed “The economic backwardness of drought prone districts outside the desert area is due not only to the limitation of natural advantages but also to the manner in which the existing endowments have been put to use by man“(GOI, 1981:31).

Moreover, irrigation tanks, ponds, canals and other water channels have not been desilted and debris has not been cleared for many years, resulting in reduction of their water holding capacity. For instance, Cuddalore district alone has more than 3,500 irrigation tanks and many of them have dried.[6] Unable to deal with the water crisis, the government seed farm has closed down in 2013 Musaravakkam in Kancheepuram district.

Unable to bear crop loss and meet obligations of repaying crop loan, farmers have ended their lives. According to Cauvery Delta Farmers’ Protection Association, since 2012, 13 farmers committed suicide in delta districts owing to crop failure following water scarcity (Srividya PV: 2014). In Panaiyur village of Kulithalai, located in the fertile taluk of Karur district, a middle aged farmer ended his life on 4 January 2014 leaving his family distraught (Renganathan, L: 2014). There is a general impression that only farmers in dry land regions commit suicide, but now this tragic practice has been witnessed in fertile delta regions as well. Unless appropriate and adequate social safety measures are put in place to tide over the drought crisis, distress may be aggravated even in irrigated zones.

**Insufficient Fodder Supply**

Drought has not spared the livestock sector as well. Scanty rainfall, non-availability of both green and dry fodder has adversely hit this sector. The state government has been supplying animals (milch animals and ovine) free of cost since 2011 as a welfare measure, and as a result demand for fodder has increased (annual requirement is 400 lakh MT against fodder availability of 300 MT) (GOTN: 2013b). To combat the shortage, the state government has initiated a three pronged scheme to supply fodder (for details see Rajendran and Rajasekaran, *EPW* forthcoming)

To make matters worse, farmers have not undertaken fodder cultivation due to the drought. Consequently, many government initiated fodder depots have been unable to meet the local demand for fodder. Farmers raising livestock have resorted to agitation in some districts to
obtain regular fodder supply. Farmers are in fix. Due to fodder shortage, cost of animal feeds like oil cakes, rice brawn, sago extract, pellets and minerals have gone up considerably. Left with no choice, farmers have resorted to distress sale of animals to slaughterhouses. Only community based gosalas\[7\] are able to manage fodder requirements. Capitalising on the shortage, private fodder merchants have made a quick buck as a tractor load of paddy hay is being sold between Rs 12,000 to 14,000. A temporary, but a bustling, fodder market has emerged this year opposite to the government regulated cotton market in Vazhapadi town.

**Drinking Water Crisis**

In face of a drought, the local administration has the tough task to ensure drinking water to the people. Many drinking water schemes have been initiated by the both union and state governments. However, none of them have been effective in providing safe drinking water on regular basis, both in rural and in urban areas. The situation is particularly deplorable in remote tribal hamlets. Now the state has initiated yet another move for providing drinking water at an estimated cost of Rs 681 crores during this summer, and its modalities are being worked out.

District administrations across the state have now woken up to the situation and have started addressing the drinking water crisis on a war footing. In Karur and Pudukottai districts, efforts are being made to renovate water supply lines, and repair bore wells and pump sets. In Thanjavur and Perambalur districts, officials have started assessing, both in rural and urban areas, the gap between demand and supply of water. District collectors have also taken measures to protect children from falling into bore holes.

In May 2014, the district administrations in Pudukottai and Karur districts launched schemes to sink bore wells for supplying drinking water. In the former district, setting up of nine mega bore wells and 22 mini power pumps at a cost of Rs 1.14 crore under the State Disaster Response Fund is underway to supply water to the municipality (Balaganessin: 2014). However, effort to ensure water supply in rural areas is yet to start. In Karur, a special committee with senior officials has been formed to monitor drinking water delivery. After realising the magnitude of crisis, an emergency control room, which can be reached by a toll free number, has been set up in Karur to redress all issues pertaining to drinking water.

Overexploitation of ground water and its non-judicious use has resulted in lowering of the water table in some areas. In addition to this, poor and erratic rainfall coupled with non-implementation of groundwater replenishing techniques\[8\] has led to lowering of the water table. In some districts like Coimbatore, Namakkal and Salem, water is not available even after digging up to 1000 feet.

Though water levels in major reservoirs like Mettur, Vaigai and Siruvani have been decreasing steadily for the last three years, this year authorities are finding it difficult to lift
water from these reservoirs. This year powerful submersible pumps are being used to draw water from the Mettur reservoir for supplying it to the Salem municipal corporation. It is interesting to note that farmers who lost their farm lands to construct Mettur dam regularly cultivate short term crops including fodder and vegetables in the catchment area of the dam when the water level recedes during summer. This year crops have been grown on more than 100 sq km area inside the dam as there is no water.

For its drinking water needs, Coimbatore is completely dependent on the water supply from the Siruvani reservoir which is situated in Palakkad district of Kerala. In May 2014, preliminary work was initiated by Kerala irrigation department officials in May 2014 to seal a pipeline which was below dead storage level in the reservoir. This would have disrupted the water supply to Coimbatore. This exercise was being undertaken despite the Kerala chief minister’s assurance that no steps would be taken to disrupt the water supply to Coimbatore and neighbouring towns. Fortunately, the dispute was resolved by a Joint Water Regulatory Board meeting of officials from Kerala and Tamil Nadu was held on 13 June 2014, and Kerala has now agreed to share water from Siruvani reservoir from the dead storage level through an additional pipeline (Staff Reporter: 2014).

Sadly, in some areas, groundwater has been polluted and is unfit for drinking. Excessive use of chemicals in farming, dumping of dreaded waste materials and hazardous hospital wastes near water bodies have contaminated the groundwater. Concerted efforts will have to be made to sensitise and educate the local community about the critical issue of water pollution.

Under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), workers can be utilised for desilting water bodies, clearing the debris in inward channels and strengthening the bunds. During acute drought, these labourers can be employed effectively to perform the above noted tasks. Community initiated (Rajendran:1994) and managed cost effective check dams have been successful in tribal dominated regions in north India, and a similar exercise through MGNREGA may be initiated here. For instance, the small reservoirs of Kariyakovil and Puzhudhikuttai, located in Kalvarayan hill range of Vazhapadi area, which irrigate around 10,500 acres, need desiltation and cleaning up of source channels to increase the inflow of water and their holding capacity. The workers under MGNREGA from nearby villages can be employed to undertake these tasks so that more water could be stored. This in turn will help recharge nearby wells and percolation ponds and improve the water table in the area.

Conclusions

Drought mitigation measures should be launched on a war footing and in a sustainable manner. Groundwater recharging should get top priority and any drought mitigation schemes should incorporate this key component. Conventional farm techniques, including adoption of drought resistant, high-yielding varieties, are to be used. With financial and
technical support from National Bank for Agriculture and Rural Development (NABARD), 18 traditional and drought resistant paddy varieties were cultivated on a trial basis[10] on 30 acres in Pudukottai between 2011 and 2014. Wherever possible, similar initiatives should be taken up for other crops.

Ensuring safe drinking water, particularly in remote areas like tribal habitations should get top priority. Before earmarking resources for digging wells and laying pipelines, local communities should be consulted to ensure efficient and sustainable use of resources. Instead of digging bore wells, which are narrow in structure, open wells should be encouraged, as the width of the latter is more and hence water percolation will be higher, leading to an increase in groundwater levels. Also manpower under MGNREGA should be gainfully utilised for planting variety of saplings on common property resources in association with forest department and local philanthropic groups. This would provide fodder, fruits and fibre to locals besides reducing soil erosion and maintaining an ecological balance in the long run.

Notes:

[1] The Maharashtra government alone registered 47 cases of farmers’ suicides so far and many of them are tenants.

[2] Coconut is considered as “kalpaviriksh”, means fruit yielding forever.

[3] In villages more than five hours unscheduled power cut is in force.


[5] It is noted that water is brought from outside by tankers to use in drip channels. Beside this, fertilizers and others are also supplied through drip system, which reduced labor cost and wastage.

[6] The Veeranam tank of this district, supplying water to Chennai Municipal Corporation, dried this year.

[7] Private trust based gosalas (animal houses) are maintained for rearing cattle. These are normally run by the Hindu religious institutions based on philanthropic mode.

[8] The AIADMK government headed by the present Chief Minister, J Jayalalithaa during
2001-05 brought out an innovative scheme for rain water harvesting, which yielded encouraging results both in rural and urban areas. Unfortunately, this did not get adequate patronage of successive governments in the state.

[9] The Tamil Nadu Water and Drainage Board draws water from Siruvani reservoir for supplying water to Coimbatore and other neighboring towns

[10] Varieties like karuadansamba, poongar and karunguruvai are not only drought and pest resistant but also yielded more as compared with modern varieties. Realising the success of the project NABARD has a plan to extend it for two more years.

References:


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