Why not make good use of drought

By Shaukat Ali Bhambhro

THE twin menace of salinity and water-logging has played a havoc with agriculture in Pakistan. Various solutions have been tried to counter or contain the menace. Now the current drought may prove to be a blessing in disguise in this regard, provided we do something on this front.

Thoughtless excessive use of water for decades following the construction of various components of our vast irrigation network in the absence of an effective drainage system, seepage of water from irrigation channels and to a lesser extent from farms, and heavy monsoon rains have been responsible for rise in the underground water table. In 1932, water table was measured at 30 feet deep in Nawabshah, Sanghar, and Mirpurkhas. But now there are 5.2 million hectares in Sindh and 3.7 million hectares in the Punjab where water table ranges between 0-10 feet below ground surface in the month of October when water-logging is at its peak. Out of this, 4.1 million hectares in Sindh has watertable depth of 0-5 feet.

To counter waterlogging and salinity, WAPDA implemented SCARP projects in various parts of the country. Though these projects succeeded in bringing considerable affected land back under cultivation initially they unfortunately lost their effectiveness with the passage of time because of a plethora of problems.

Evaporation ponds were also constructed for this purpose. However, while these ponds resolved the problem in the area of their construction, they had the potential of creating complication of their own through seepage. Further, while land in one part of the country was reclaimed, the double attack from waterlogging and salinity continued to affect other areas.

In Sindh, over 2.1 million hectares comprise gypsiferous and non-gypsiferous saline sodic soil. Of these, 5.6 per cent are slightly saline and 15.4 per cent moderately saline which can be reclaimed by following well-established soil reclamation technologies. The remaining 79 per cent of the area vary from severely to very severely saline sodic soils requiring a highly specific technology for their reclamation.

Moreover, agronomically suggested reclamation practices includes: (i) preparation of land with the desired implements; (ii) inclusion of leguminous crops, especially pulses on a regular basis as soil restoring crops in crop rotation; and (iii) application of farm yard manure (FYM) or green manure after every three years. But unfortunately, majority of growers in Sindh, financially constrained and ignorant as they are, instead of adopting these tips for the reclamation of saline and waterlogged soil preferred to switch over to heavy water feeder crops like rice, banana and sugarcane, which rendered more and more area unsuitable for cotton and orchard, particularly in the cotton growing districts of upper Sindh.

However, the current drought-like situation, following almost complete absence of monsoon rains for the last three years coupled with an acute shortage of water in the irrigation canals, as a matter of fact, has provided us an opportunity to do something about the salinity and waterlogging menace.

The natural phenomena has significantly lowered the underground water table rendering vast tracts of slightly to moderately waterlogged lands suitable for cultivation of cotton instead of illegal growing of paddy, and making those lands reclaimable which are heavily waterlogged and which are chronic marginal lands rather waste lands (now completely dry).

Accordingly, many resourceful farmers, taking advantage of this situation, has started converting their waste lands into fish ponds employing heavy machinery which operation was not possible just till last year because of high water table.

Some prudent growers have found ways to cope up with the situation and to use it for their advantage. One such grower is Ijaz Ahmad Phulpoto, a progressive grower of Khairpur. Within one year he has managed to reclaim over 100 acres of water-logged saline land, previously used for illegal cultivation of rice, by simply bringing it under janter (green manure) followed by cultivation of berseem crop.

Since the water table has gone down significantly in the absence of recharging, either through monsoon rain or seepage from canals, frequent irrigation of fodder crops by using water extracted through tubewells has pushed down the leached dissolved salts beyond the capitarity zone (from where water moves upwards thus causing salinity and waterlogging). If irrigation water is judiciously used it is not unlikely that reclaimed land can be utilised for cotton and other cash crops for longer periods. However, reclamation of land under the present water crisis situation is possible only where underground water is sweet and growers have tubewell facility at the land to be reclaimed.

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Since majority of growers are poor and thus unable to install tubewells it is necessary that the government should give at least 50 per cent subsidy on tubewell installation.

Further, subsidised tubewell tariff should be approved for the drought-affected growers of Sindh as has been done in case of growers of Balochistan. Efforts should be made to implement the Chinese model of transforming saline alkali land under drought condition.