

Ten engineering challenges



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Sanjib Sabhapandit 12 August 2014 Updated 12 Aug 15956 views

Problems after problems seem to have stifled [Assam](#) and its people. Precisely, the problems are hydra-headed. Lack of civic sense and lackadaisical attitude of the authorities have further compounded the problems. But solution is not an uphill task. Need of the hour is a slew of initiatives, writes engineer Sanjib Sabhapandit who is leaving before you ten solutions to get ride of these plethora of problems.

1. Flood is a perennial problem. [No](#) solution is forthcoming to reduce [flood](#). So living with [flood](#) decently is a necessity.

The Problem: [Design](#) a floating (collapsible and modular) vessel to accommodate [30/40/50](#) persons at a time with air sleeping bags, men-[women](#) separation provisions, [rain](#) water harvesting, solar lanterns, water filtration unit, [fire](#) briquette chullah, provisions for study for children /students, latrine with disposable septic tank etc.

2. Waste disposal is a problem here. With uncontrolled use of plastic/ polythene/ tetra packs etc and mushroom growth of ownership flats/ shops/ market places everywhere, the problem is [more](#) acute now.

The Problem: To design a machine that will shred all kitchen garbage and the like and make a pulp out of it and squeeze it into pellets which can be handled easily. The machine is to be housed / mounted on a chamber which will have waste segregation chambers.

3. Earth cutting in the [hills](#) to build residences has resulted in soil erosion, clogging of [drains](#), artificial floods etc.

The Problem: To design structures to support houses in the [hills](#) without or minimal [earth](#) cutting and also soil retention mechanism

4. The road [traffic](#) and the resultant pressure on the roads is enormous here. We have large number of rivers and their tributaries which offer tremendous navigational prospect.

The Problem: To design suitable passenger / cargo vessels, boarding - unboarding , loading unloading platforms, material handling mechanisms for use in the river system here.

5. This place, although secluded, remote and inconveniently located, has sustained a reasonable and cultured human life from time immemorial. It has traditional wisdom to treat diseases, preserve seeds etc.

The Problem: To identify the traditionally effective practices / devices / tools / medicines , standardize these and pave the way for their mass circulation / use on a commercial / economic scale

6. Almost all the tribes here drink locally brewed alcohol. But these are all made in very unhygienic conditions. Country [liquor](#) making processes need to be modernized

The Problem: To [Design](#) small country [liquor](#) brewing machine .

7. Parking of cars is a very serious problem in all the towns and cities in the North East India. Enough space was not reserved for any public utility purpose like parking, play fields, gardens, hospitals, educational institutions etc here. So [new](#) approaches need to be adopted like creating parking places above the roads itself or covered [drains](#) etc.

The Problem: [Design](#) elevated prefabricated structures over existing roads as parking places. 8. [Sahitya Sabha](#), Xankar sangha sessions, Islamic(Istema) and Hindu(Ambubachi) religious congregations, mobile theatre shows, [Bihu](#) & Puja festivities- all are [held](#) in open fields. Toilets, latrines are the biggest inconveniences. People defecate in the open which is very uncivilized & unhygienic. Women are the greatest sufferers. This situation has to [end](#). The Problem- To design collapsible toilets with pressurized flushing provisions and biodegradable septic tanks. 9. Small tea gardens are mushrooming in the state. Small sugar cane crops are the norm here. But all of them are at the mercy of others for processing their crops. They are not going for any value addition The Problem- To design small scale table top mounted tea processing machine or sugar making machine 10. Fuel is the biggest issue here. Kerosene price is untouchable. Forests are dwindling. [LPG](#) connection is for the few. Coal is also a scarce commodity now. The Problem- To design small size fuel briquette making(from paddy husk, saw dust, dry grass / leaf) machine river system here.

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