



Natural Resource Consumption and Lockdown

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Abstract

Resource consumption is about the consumption of non-renewable or renewable resources. Water, oil, natural gas, environmental degradation, deforestation, resource depletion, energy consumption etc. unsustainable consumption by steadily increasing population may lead to resource depletion. Natural resource management is the management of natural resources like water, land soil, plants and animals. With a particular focus on how management focus on living styles for present and future generations. India is fast moving towards crisis of ground water (GW) overdose. National per capita annual availability of water has reduced 15% from 2001 to 2011. A common man has important role in natural resource management. Even being at home he might be consuming or conserving natural resources in terms of fuel for vehicle, gas for kitchen, water for bath, electricity for light and gadgets. Two things need to be focused one the environment in which we live and other our own body. We need to know how much we consume our natural resources daily so we consume less and conserve more, we can leave behind a healthy future for generations to come. We need to know what natural resources are and out of them what actually we daily consuming even being at home. Lockdown has increased or decreased consumption of natural resources, how much our life style depleting these natural resources and how to conserve it for future generations, is central theme of this paper. Awareness, conservation of natural resources and its consumption in home, is analyzed in the paper.

Keywords: Natural Resource Consumption, Sustainability, Conservation.

1. Introduction

Natural resources vary greatly in their location, quantity and quality. Earth's resources which contribute households are forests, mineral, water, food, energy and land. (Two things need to be focused one the environment in which we live and other our own body. Resource consumption is about the consumption of non-renewable or renewable resources specially (1)

- Water consumption
- Energy consumption
- Natural gas consumption
- Oil/fuel consumption

- Deforestation
- Environmental degradation
- Resource depletion

Measures of resource consumption are resource intensity and resource efficiency. The resource consumption rate of nations doesn't correspond with primary resource availability (resource course) • Unsustainable consumption by steadily growing population may lead to resource depletion. Natural resource management is the management of natural resources like water, land soil, plants and animals. With a particular focus on how management focus on living styles for present and future generations. Natural resource management focuses on scientific

and technical understandings of resources ecology and life supporting capacity of those resources.(2)

- Poor countries are much dependent on natural resources.
- Natural resources can provide a safety net at time of crises.(12)
- Ecological water conservations have existed in India 1500 yrs back, traditional system of water harvesting.(13)
- Drought tolerant Native plants can save large amount of energy(up to 550 gallons of water can be saved per year per plant)(14)
- River sand mining is contributing to slow-motion disappearance of Vietnam`s Mekong delta.ocean dredging has damaged coral reefs in Kenya, Persian gulf and florida.in India amount of construction sand has more than tripled since 2000. And still raising fast(17)
- Community conservation programs have impact on households(18)

2. Climate Change

India stands at 128th position in the world human development index. No country in history

has improved its level of human development without corresponding per capita increase in energy. Figure 1 gives comparison .Indian energy intensity shows a rapid decline and all modelling results show that it will continue to decline. This is the reason behind a gdp growth rate of 8% per annum being accomplished at no more than 3.7% increase in energy use. Over several decades India has pursued policies and publicly funded programs focused on energy conservation and deployment of renewable energy technologies. (6). Kautilayas famous treatise arthshastra describes what may be considered as world`s first forest conservation and wild life management programme.maurayn kings` maintained forests for different purposes like elephant domestication, hunting and forests as reserve. (11). Lockdown is meant to prevent the spread of infection from one person to another,to protect ourselves and others,increase your immune system,community participation,naturopathy and lowering the consumption of natural resources habit.

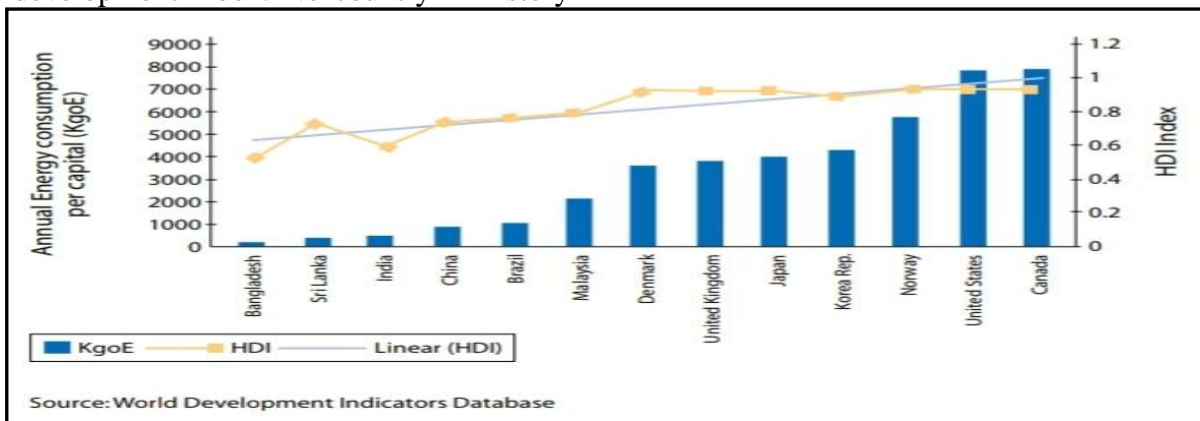


Fig1: An International Comparison between Human Development Index and Per-Capita Energy Consumption (6)

3. Water Status

Ground water extraction and use: in India surface water is more available than ground water. India is fast moving towards crisis of ground water overdose and contamination. Overdose means extraction rate is more than recharge rate, in last two decades level of GW development is as in table 1.Delhi,Haryana,Punjab in overexploited ,over the

years, usage of ground water has increased in areas where resources are readily available.GW for domestic use is 9%, of extracted GW,50% of urban water requirements and 85% of rural domestic water requirement is by extracted GW

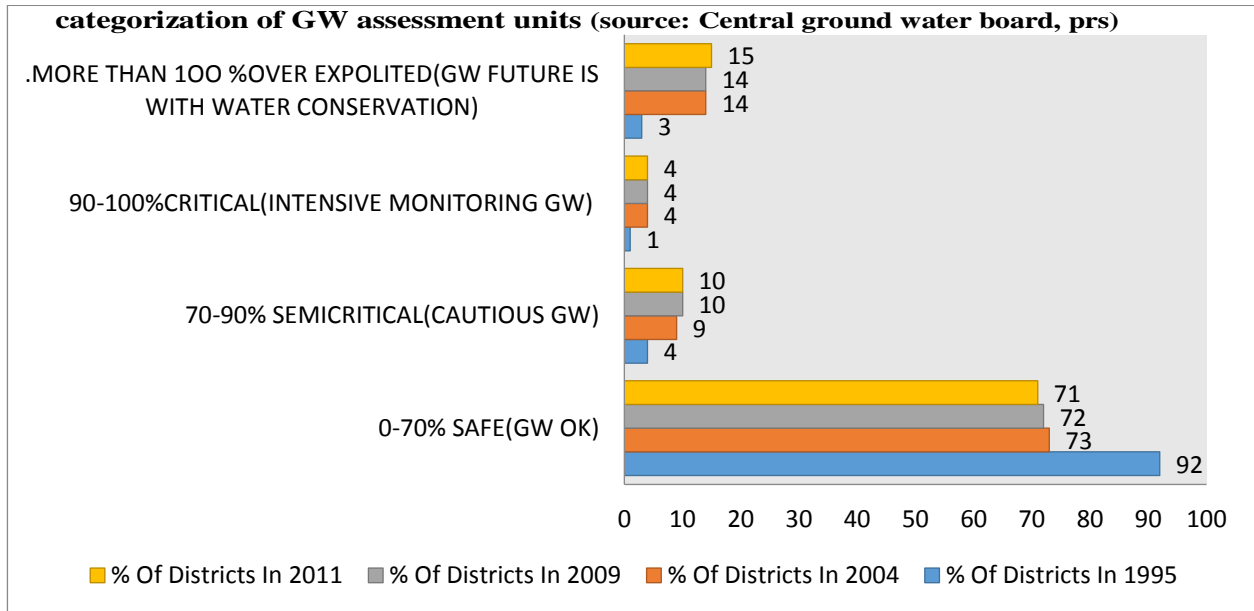


Fig.2: Categorization of Gw Assessment Units

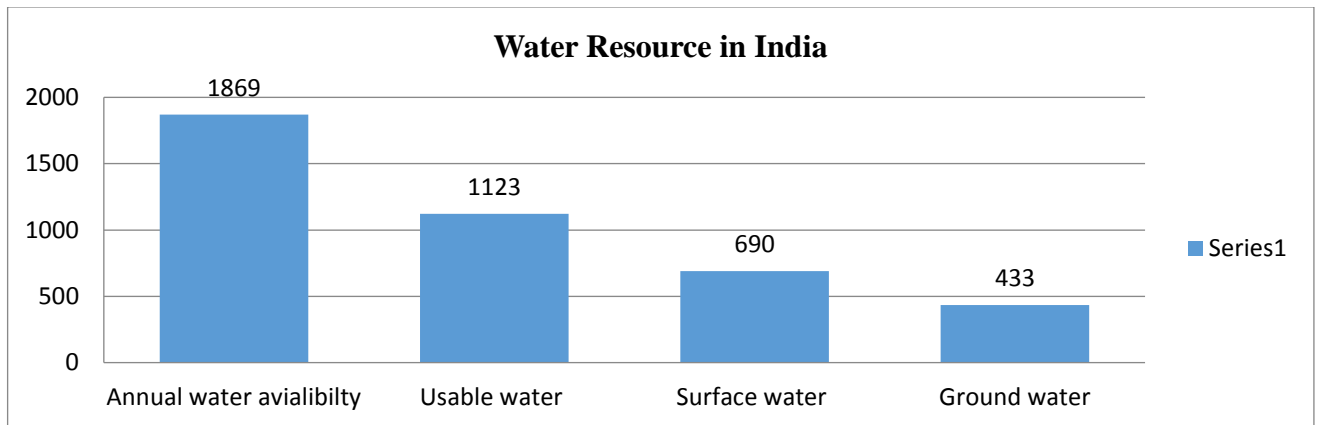


Fig.3. Water Resource In India(BCM/YEAR)

- Sources: water and related statistics, April, 2015, central water commission, PRS, National per capita annual availability of water has reduced 15% from 2001 to 2011.

Recommendation of standing committee on water resources (3) are as follows:

- ❖ The document master plan for artificial recharge to ground water water is prepared by the central ground water board in 2013
 - ❖ Identification of suitable areas for artificial recharge
 - ❖ Estimation of subsurface storage space availability
 - ❖ Quantification of local surplus annual run-off availability as source water for artificial recharge
 - ❖ Study of dark blocks
- Natural resource exploitation is an essential but

not a sufficient component of broad based and stable economic development. Even more important are education, technical training and other forms of human capacity building. (10)

4. Energy (4)

To measure energy requirements, one can measure quantity of energy demand. The engineering approach is a bottom –up and a more detailed way of assessing energy requirements based on household needs. Household energy utilization in terms of two basic energy services: lighting & cooking. overall in India energy poor, energy transitional, energy non-poor in urban areas are 30%.26% and 44%.

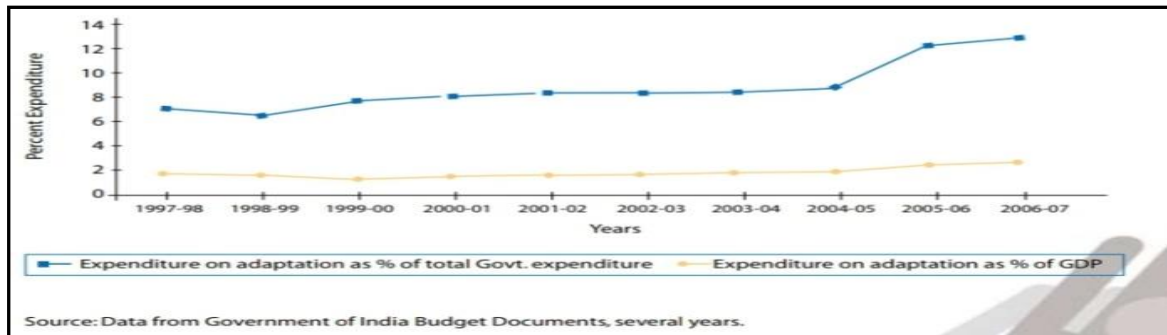


Fig.4: Annual Central Government Expenditures to Address Climate Variability (6)

5. Joint Forest Management Program (JFM)

JFM Has been key policy instrument in stemming forest degradation and promoting conservation of natural resources. It gives linkage between following:

- Sustainable use of Forest products
- Forest conservation
- Role of forest dependent community to bring desired results.

There is variation in fuel wood consumption in participant and non-participant households in community forest management programs. Urban households 62% dependent on LPG.20.1% on firewood & chips, 7.6% on kerosene; variation is due to income groups. Effect of people’s use of natural resources changes over time, these changes have cumulative impact on forest resources and fuel wood extraction. (7)

How to find which product is sustainable: air trade, eco-level, organic, c2c certificate, are used for social environment standards. (12 & 14) purchase plants that are native to your area (ecosystem) for birds butterflies etc., can be created in your backyard. Create a non toxic safe home for your family and pets.

Let us move inside house and find what things we are doing there.

1. Fooding : have we meals plan for a week, or we still more non-veg prone, where we throw our kitchen waste, are we conscious for kitchen garden, if all answers are yes definitely we follow food conservation. Our country is a big country food is needed alot, consume less and serve food to others.

2. Home making: are we using wood replacement, stones like granite etc replacing with artificial stones, our paints are environmentally friendly, we have plants for birds and bees, we are using precast technique to save natural material wastages, if we are making house as per climate then we are more environmentally friendly.
3. Energy conservation: do we are aware of task specific energy use. like which place and when and how much light is needed, night our switch off gets, set up boxes,computers,printers,using floor lights ,leds, using day sun light through window opening, maintenance of electrical appliances regularly, using solar panels as alternate energy source, sharing vehicles for movement, properly disposing electronic wastes, then definitely we are following energy conservation.
4. Water conservation: bathrooms are places where we spent time more, so bathing by buckets, using western system as commode, gardening by on of motor, for getting to close taps, definitely we are losing water for future?, use dual flush toilets. It’s estimated that 13.7% of household water is wasted by leaks.

Goose (16) in his paper calculated the gap in aggregate consumption, depending upon recycling rate, the time difference in in aggregate consumption curves with or without recycling.

What to Do Then

- ❖ Use shower to reduce water consumption

- ❖ Use sprinkler for gardening with bucket to store and use water.
- ❖ Use water alarming system to switch off motors or taps.
- ❖ Do not put wastes in fresh river water
- ❖ Give garbage to your collector agency or to dump yards.
- ❖ Be paperless as paper industry consumes more water.
- ❖ Use ac side warm air to dry out your wet clothes in place of drying it at washing machines.
- ❖
- ❖ Use washing machines with full load condition.
- ❖ Adopt task specific lighting.
- ❖ Adopt roof top artificial rainwater harvesting system for your own house.

- ❖ Be more vegetarian.
- ❖ Adopt paints for less maintenance and less infectious
- ❖ Adopt sustainable materials.
- ❖ By switch off your gadgets at night, upto 10% your electricity bill may reduce.(15)
- ❖ Consumers are key actors who also have a shared responsibility for more efficient and sustainable resource use. In order to increase demand and consumption of green products, four factored needed(8)
- ❖ Strength awareness regarding green products
- ❖ More availability of green products
- ❖ Clear clarification for green claims made by producers
- ❖ Lower costs of green products

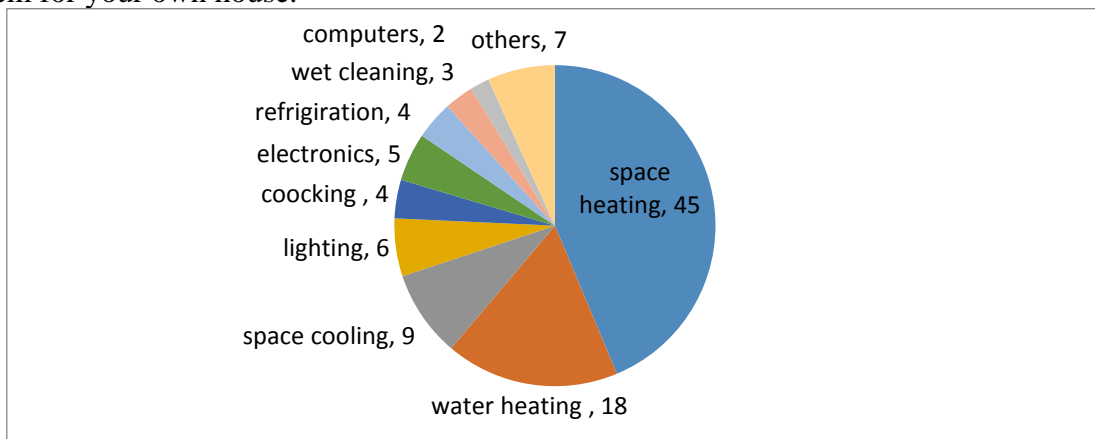


Fig.5: Residential Site Energy Use (14)

6.Survey: Through Online Questionnaire

Authors conducted survey based on above questions and findings pasted as follows:

1. Home making@sustainability
 - 1.1. Greenery 70% at front
 - 1.2. while 40% as terrace
 - 1.3. Only 35% use environmental resistant painting(25% no awareness)
 - 1.4. 85% use wooden furniture (25% recycled material)
 - 1.5. 70%still on wood doors (20% recycled materials) 20%said they have no means for house waste disposal.
 - 1.6. Average 38%
2. Energy conservation

- a. 55% said they use task specific lighting(40% everywhere)
- b. 50%use solar light(50%not)
- c. 90%using sun for drying wet clothes
- d. Rated appliances used by 80%(20%no)
- e. 90%say they switch off computer
- f. While 70% printer and set up boxes.
 - i.Average 69%
- 3.Water conservation
 - a. Only 15% have roof top rain water harvesting.
 - b. Full load of washing machine 20%
 - c. Water conservation for gardening 35%
 - d. Lawn watering schedule 10%

- e. 50% say they use bathing by buckets(25 shower)
- f. Only 55% use Indian pattern commodes.(25% western)
- g. Average 26.67%

4. Food conservation

- a. 40% have weekly meal plan
- b. 25% use reusable containers for lunch
- c. 35% use reusable bags

- d. 35% do not use plastics
- e. 15% use compost pile at home
- i. Average (30%)

✚ Fuel Conservation

- a. 15% use electrical vehicles
- b. 15% prefer share vehicle
- c. 40% check tyre inflation
- d. 40% effectively use gas cylinders
- e. average 44%

Result Summary and Interpretation

Table1: Summary (Red Means Lower To Average Value)

Sr No	Conservation Type	Average Response (%)
1.	Home Making(Sustainability)	38
2.	Energy Conservation	69
3.	Water Conservation	26.67
4.	Food Conservation	30
5.	Fuel Conservation	44
	Average	41.53

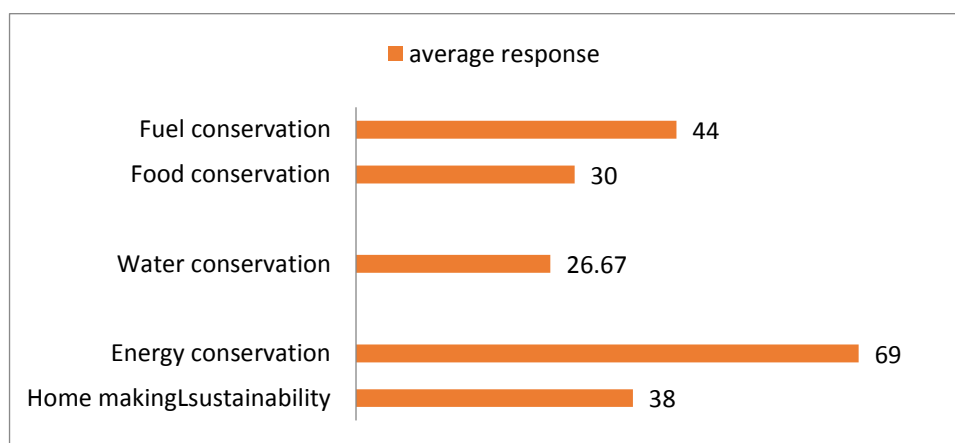


Fig.6: Average Response

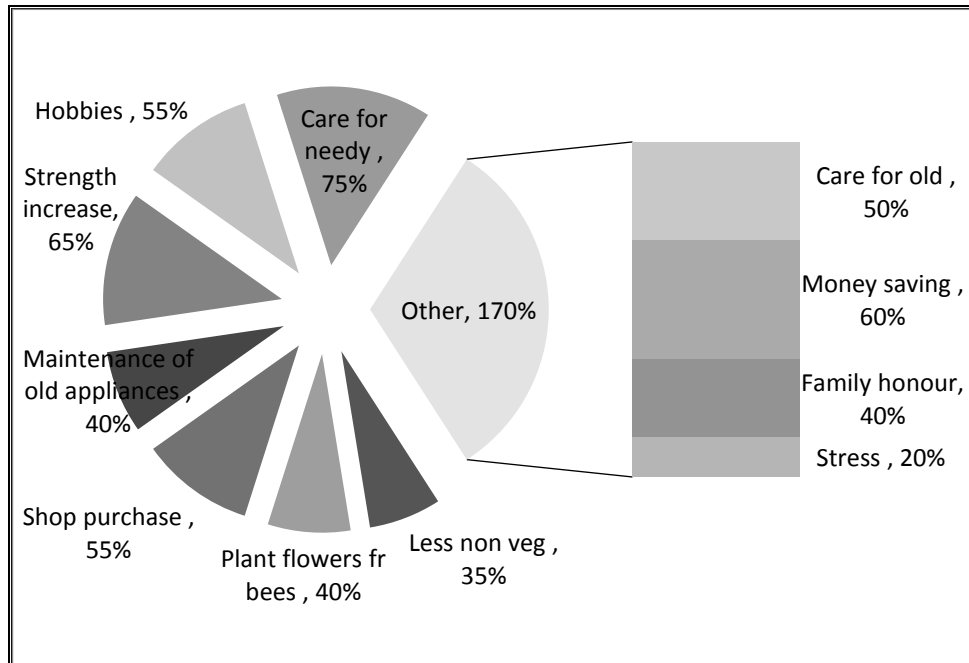


Fig.7: Lockdown Effect Summary

Indian people have not been exploiters but utilizers of nature. We now need to sustainable use o it only

Conclusion

- 52% as an average people with **Positive Thought** in lockdown,while 20% people are still *Under Stress*.
- Home making, food , water are below average value, this means in country like India we need people awareness programs on such issues to help mankind.
- 95% saying they are good citizen....is it true after seeing above one response?
- No...It's alarming...,Then why waiting...introspect your self.Simplify your life as much as possible, by making the effort to reduce what you own, you will naturally purchase less/create less waste. So follow reduce-reuse-recycle.
- As lockdown ends we will miss the extra silence we have had, and feel typical effects of higher blood pressure, stress levels, risk of depression, reduced mental performance.
- Reforestation will help climate emergency.
- Real uncertainties are not scientific but socio-political.
- Building a community is an anti-tode to the feeling of loneliness in the face of crisis.

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