



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research  
Vol. 10, Issue, 02(D), pp. 30962-30963, February, 2019

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## CASE STUDY

# ECONOMIC CONSIDERATIONS OF WATER FROM AIR MACHINE TO DRINKING WATER AND AGRICULTURE IN INDIA: A CASE STUDY

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DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1002.3162>

### ARTICLE INFO

#### Article History:

Received 4<sup>th</sup> November, 2018  
Received in revised form 25<sup>th</sup>  
December, 2018  
Accepted 23<sup>rd</sup> January, 2018  
Published online 28<sup>th</sup> February, 2019

#### Key Words:

Meghdoot, water from atmospheric air generator, drought

### ABSTRACT

In this paper commercially available water from air machine meghdoot is considered for initial payback period during which the drinking water is sold to customers of India. The payback period is found to be one year with a profit of Indian rupees three lakhs. After the payback period the machine is given free of cost to the farmers of drought hit areas in India. To meet the packaged drinking water demand in India 38493 machines are required. At the start of every year 38493 machines are purchased for commercial drinking water purpose and at the end of every year 38493 machines are given to farmers of India. The methodology can be used to eradicate water scarcity in India in steps of one year.

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## INTRODUCTION

Nowadays water scarcity is the biggest problem that we are facing, due to this we can see many drought hit areas among the world. Speaking about India Maharashtra, Karnataka, Andhra Pradesh are the places affected by the drought. We can solve this by using a machine which converts air to water, by this we can eradicate drought hit areas from water deficit.

### Economic Considerations

Problem of drought prone areas have done research for many alternative methods and have come up with the solution known to be Atmospheric Water Generator. This technology has been developed and implemented by many companies abroad. IICT, Hyderabad in collaboration with other Indian industries developed indigenous water from air generator. As a result of their experiment hopefully there was a solution for eradication of drought hit areas as follows.

A water generator meghdoot machine costs fifteen lakhs including a bottle filling machine which is approx 2.5 lakhs. Assumed that a machine produces 999 litres per day. The profit earned on each one liter bottle is assumed to be rupees five. The profit at the end of first year =  $365 * 999 * 5 = 1823175$  Indian Rupees.

Since each meghdoot machine costs fifteen lakhs, net profit =  $1823175 - 1500000 = 323175$

Water demand per year in India = 11,540 million liters

Number of meghdoot machines required to meet the demand =  $(11540 \text{ million liters} / 999 \text{ liters} * 365) = 31538$  machines.

Thus at the start of every year 31538 machines are purchased and at the end of every year 31538 machines are given to farmers of drought hit areas at free of cost.

### Role of Educational Institutions

Educational institutions which are using water tankers trucks for meeting the water demand can install Meghdoot machines. Technical details of water from air is shown in figure 1.

Initially humidity content air from atmosphere enters the machine.

Then compressor run by electricity can be used to convert humid air to ice.

The defrost method is used to convert ice into water.

The quality of the water can be inspected and chemicals can be added and filtered to get clean drinkable water.

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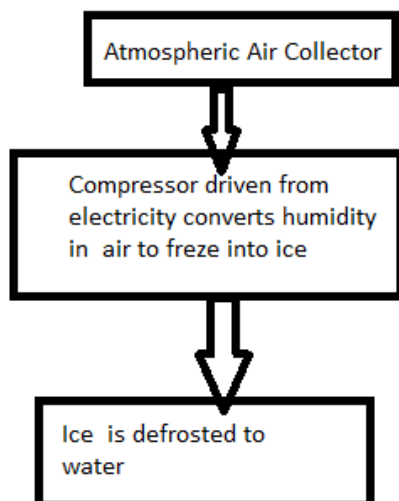


FIGURE1: technical process to convert humidity in air to water

## CONCLUSION

Economic Considerations of water from air is studied. If this methodology is implemented it may eradicate water drought in India. One of the important consideration is the machine operates at its full capacity of at 999 liters if humidity of air is greater than 80%. The minimum humidity of air at which the machine operates is 30%.

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### How to cite this article:

Jayatheertha HJ. et al., 2019, Economic Considerations of Water from Air Machine To Drinking Water and Agriculture in India: A Case Study. *Int J Recent Sci Res.* 10(02), pp.30962-30963. DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1002.3162>

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