

# Exploration of Agri-Waste Management & Green Economy



**By: Dr. Neeta Raj Sharma**  
**Dean, School of Bioengineering and Biosciences**  
**Lovely Professional University, Punjab, India**

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# Profile of Agriculture Sector in India

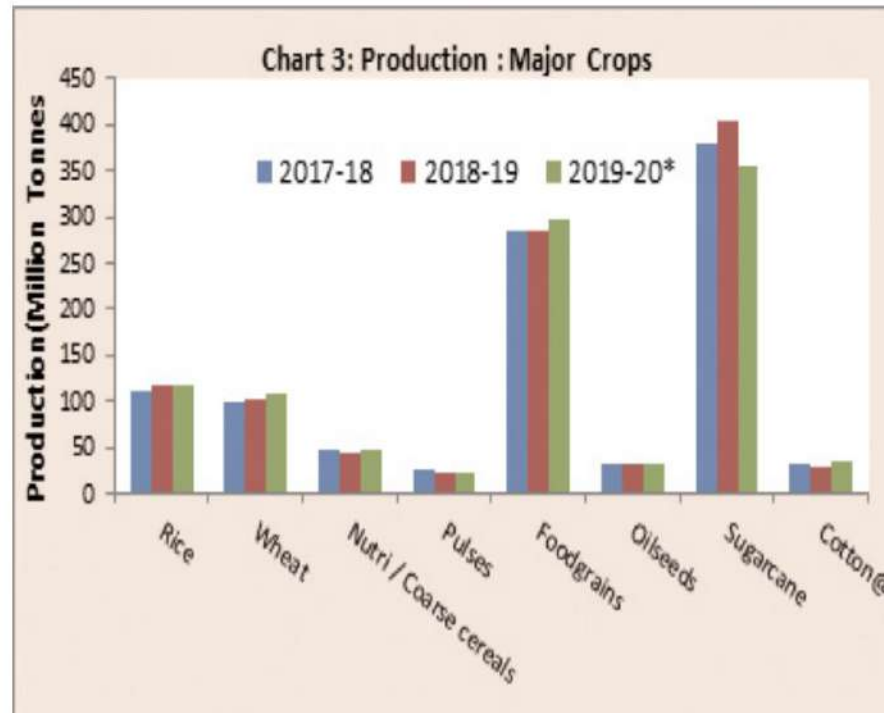
1. The percentage share of Agricultural workers in Total workers is 54.6%.
2. 57.8% of rural households are engaged in Agriculture
3. Cropping Intensity for 2015-16 season has been estimated at 141.25%.
4. The small and marginal holdings taken together constituted 86.08% of the total land holdings in 2015-16.

# Profile of Agriculture sector in India

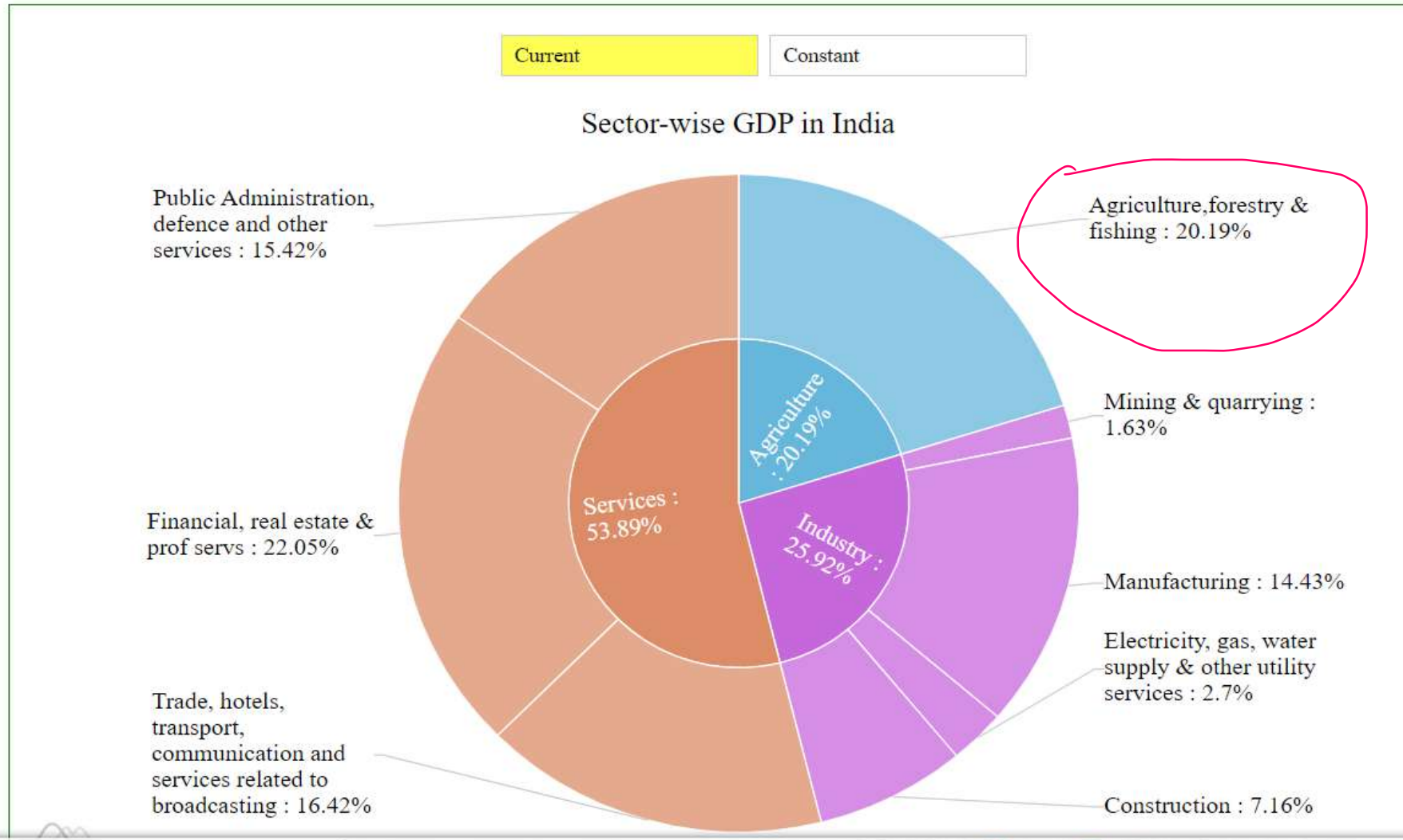
Demand for foodgrains projected by Niti Aayog (2020-21) and domestic production (4th advance estimates for 2019-20, DES).

(million tones)

Commodity	Rice	Wheat	Cereals	Pulses
Demand projection	107.08	94.45	244.89	26.64
Production	118.43	107.59	273.50	23.15



# Contribution of Agriculture Sector in GDP



# Sources of Agri-Waste

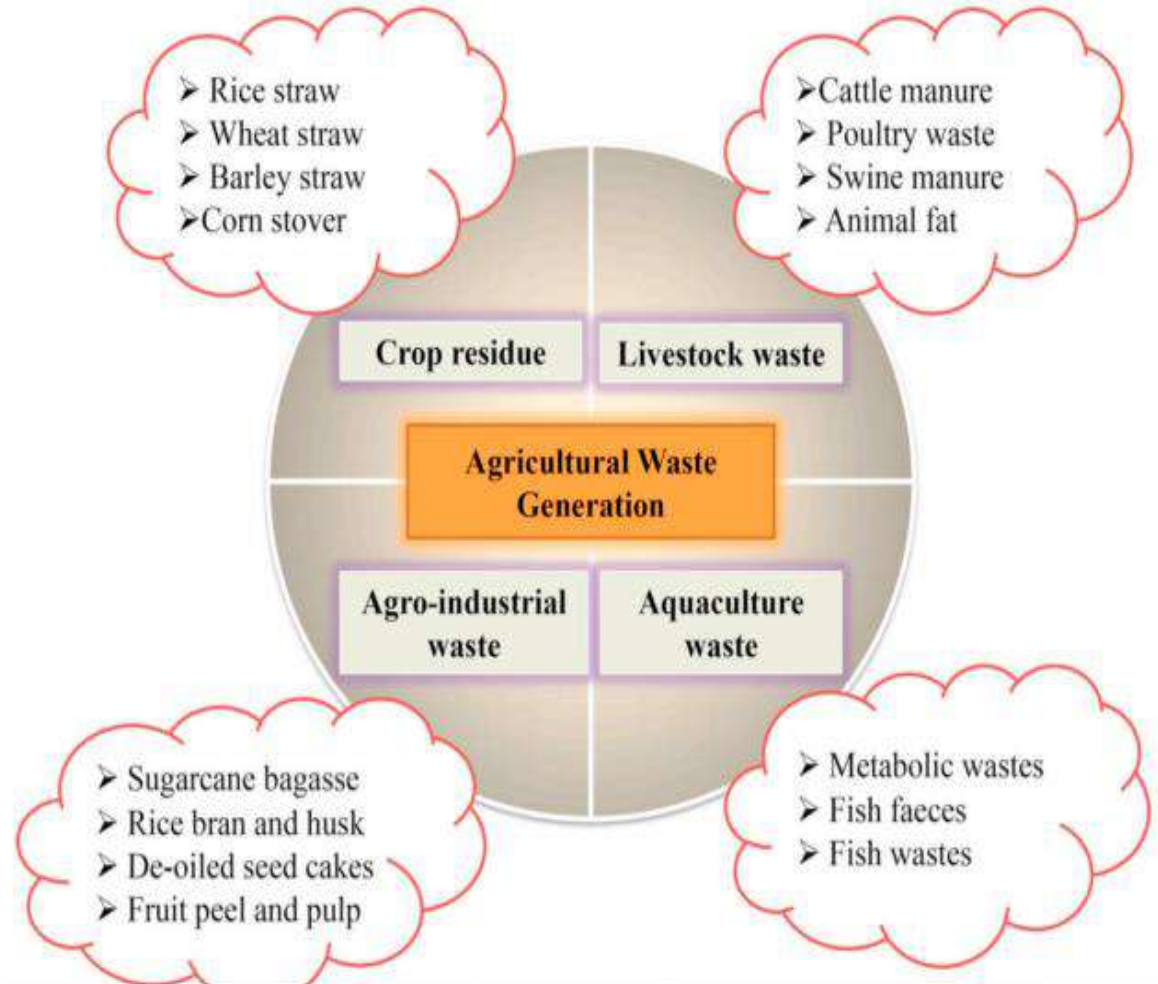
**Crop Residues: 2802 Mt/y globally**

**Rice Straw: 731 Mt**

**Wheat Straw: 1–3 T/acre/y**

**Sugarcane Bagasse: 180.73 Mt**

**Fibre Crops :17.7 Mt**



# Agri- Waste (Crop Residues) Generation

- Agri-Waste production : 350 – 990 Mt/y
- India : 2<sup>nd</sup> largest producer of Agri-Waste after China
- Paddy Straw production: 130 Mt
- Wheat Straw: 120 Mt



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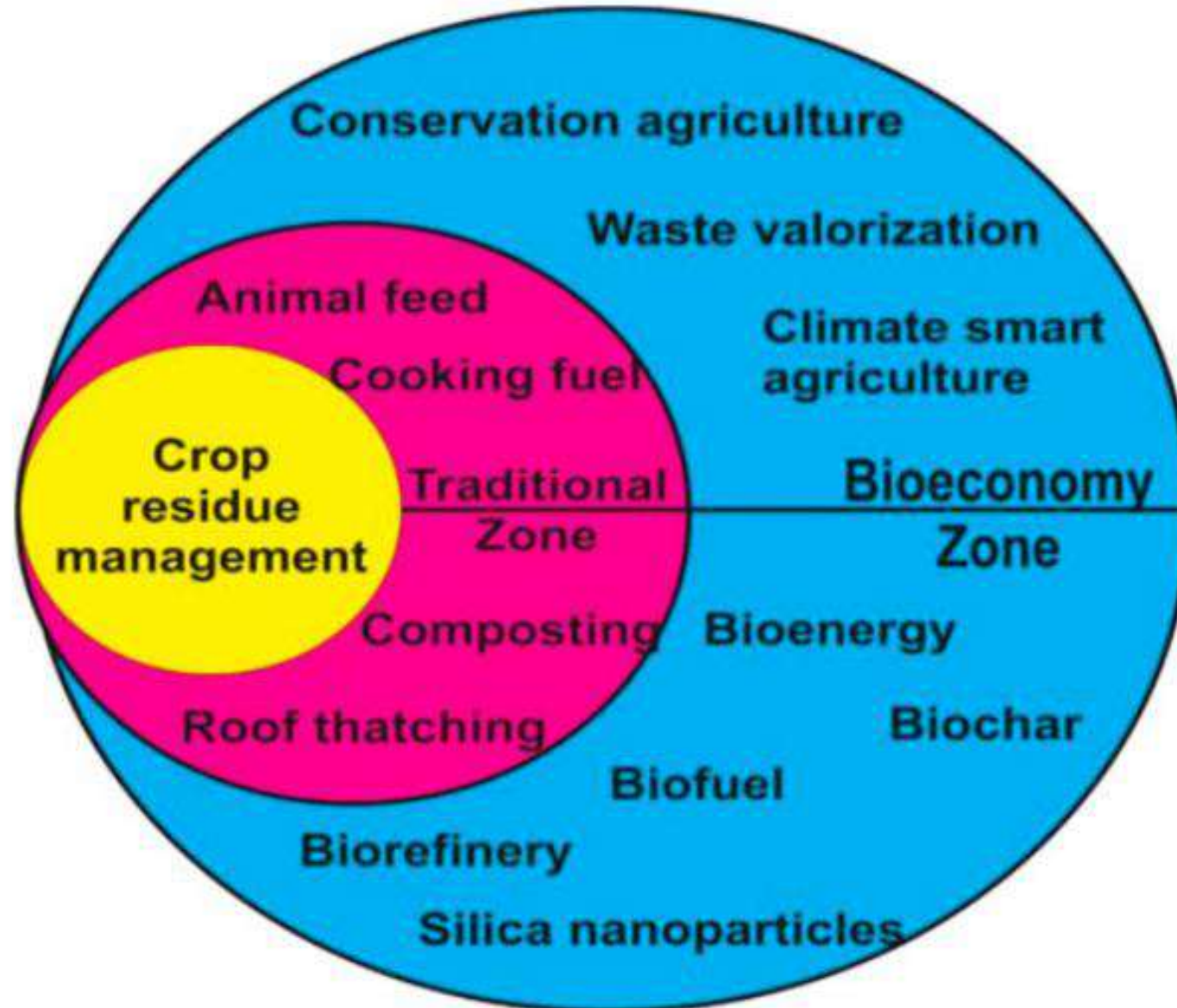


# Crop Residue Management

- India produces more than 620 million tonnes agricultural waste annually of which only 25-30% part is utilizing as livestock fodder and energy production.



# Paradigm shift



# Agri-Waste: Mining Green Economy coins



# Research Case Studies:

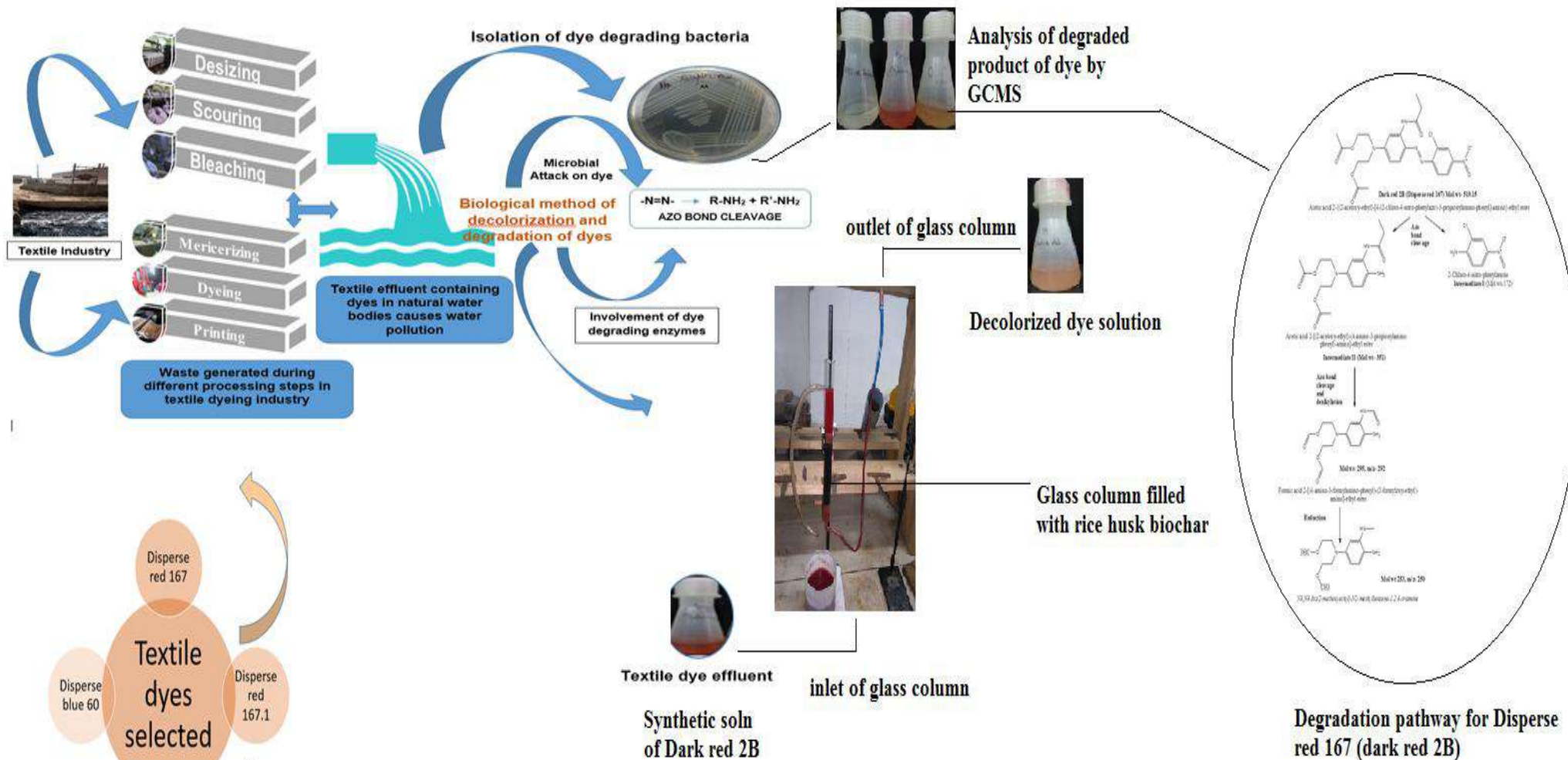
- At School of Bioengineering and Biosciences

## INDUSTRY TIE-UP



**Textile Effluent Treatment Prototype designed by Student in collaboration with Tata Consultancy Services (TCS)**

# Development of innovative clean-up technology (biofilters) for effective degradation of textile waste effluents



DEEPIKA BHATIA

DBT-JRF

*Patent Published on title "PROCESS OF DEGRADATION OF TEXTILE DYES" with Application No. 201811002650.*

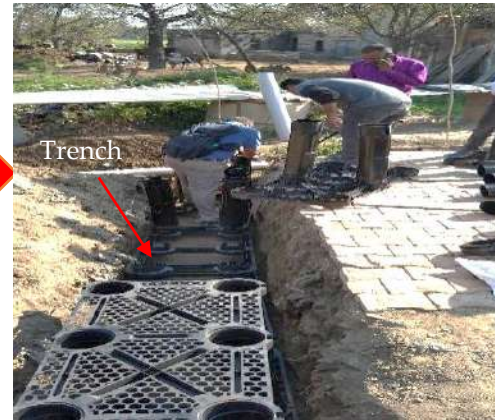
## COMMUNITY PROJECT



MEHAT CAR WASH SITE



LPU CAR WASH SITE



CREATING TRENCH



PLANTING POPLAR TREES



REMOTE MONITORING STATION



INSTALLATION OF CONDUITS



LAYING GEOPOLYMER CONCRETE PAVERS

**Car Wash Effluent Treatment System**

**Collaborated project: University of Victoria, Canada**



# Treatment of Car Wash Effluent



## EXTENSION PROJECT FOR INDUSTRY:

Testing and Upscaling 'Phytoremediation Technology' in Real-World Conditions



**COLLOBARTED  
PROJECT: LAVAL  
UNIVERSITY. CANADA**

**Technology Dissemination in Copper Mining Industry in Quebec, Canada**





# **Industry Oriented Projects**

## ***ENHANCED SACCHARIFICATION OF AGRIBIOMASS***

(Patent Granted :Application No. 201711008957)

**The method is applicable to enhance enzyme production from the Microbes and useful for wide range of industrial applications.**

# Conclusion

**Thanks**