

## CENTRE DESCRIPTION

NEWS India-UK (Newton-Bhabha Virtual Centre on Nitrogen Efficiency of Whole-cropping Systems) has been established to promote cooperation between India and the UK to develop innovative ways to improve agricultural nitrogen management, allowing increased and more resilient food production in India while also reducing nitrogen (N) losses to the environment.

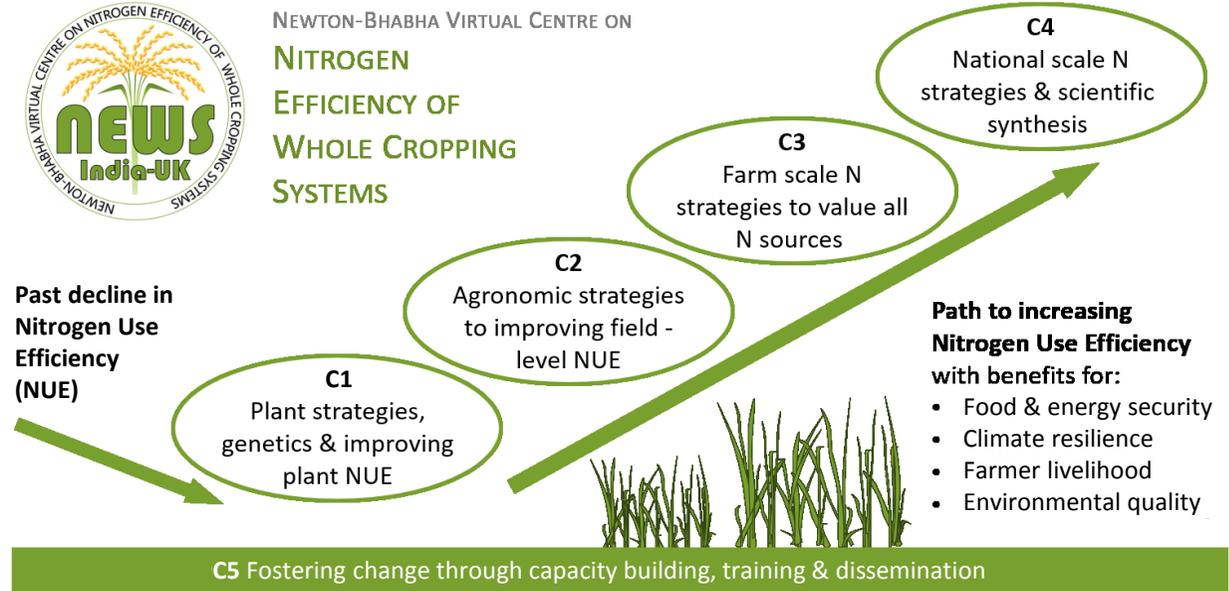
## SCIENTIFIC GOALS

- 1 To establish a national agricultural N budget for India, allowing scenarios of improved N management and resilience to be examined.
- 2 To quantify the relationships between nitrogen use efficiency (NUE) improvement and measured reduction in N losses.
- 3 To compare the effectiveness of agronomic and biological approaches to improving NUE, and to assess by how much combined approaches maximize overall crop performance.
- 4 To test how better use of all available N resources can improve farm NUE in rice-wheat rotations.
- 5 To characterize and explain plant NUE differences, including establishment of a phenotypic ranking of Indian rice varieties for NUE.



NEWTON-BHABHA VIRTUAL CENTRE ON  
**NITROGEN  
EFFICIENCY OF  
WHOLE CROPPING  
SYSTEMS**

Past decline in  
Nitrogen Use  
Efficiency  
(NUE)



## COMPONENT 1 (C1)

combines laboratory ranking of Indian rice varieties and Genetically Modified (GM) varieties with exploration of trait differences.

## COMPONENT 2 (C2)

integrates agronomic and genetic potential to improve NUE with field measurements of full N fluxes to quantify the link to reduced environmental impacts.

## COMPONENT 3 (C3)

addresses options for better recycling of manures and use of N deposition, and examines the barriers to change.

## COMPONENT 4 (C4)

compiles data and models to establish an Indian agricultural N budget and assess the potential of future options.

## COMPONENT 5 (C5)

links across the Virtual Joint Centre to strengthen the research integration and build a basis for durable cooperation.

# - PARTNER INSTITUTES -

- Aligarh Muslim University
- Centre for Ecology & Hydrology
- Indian Agricultural Research Institute
- Indian Institute for Rice Research
- Guru Gobind Singh Indraprastha University
- University of Aberdeen
- University of Edinburgh



## DIRECTORS

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## NEWS INDIA-UK IS FUNDED BY



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