

Review Form 1.6

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_90567
Title of the Manuscript:	Sub-soil nitrogen content as influenced by long-term manuring and its relationship with nitrogen availability and productivity of a rice-rice cropping system in Eastern India
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalijecc.com/index.php/IJECC/editorial-policy>)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>Investigation was made to study the impact of long-term fertilizer and manure application on the sub-soil nitrogen (N) fertility of an acidic <i>Inceptisol</i> under continuous rice-rice cropping system. For this purpose, a long-term fertilizer experiment commenced from 2005-06, <i>rabi</i> season in the Central Farm of Odisha University of Agriculture and Technology (OUAT), Bhubaneswar under aegis of ICAR, New Delhi was used. The experiment had 12 manurial treatments whose impact on sub-soil N fertility up to 75 cm depth and its relation with surface soil N fertility, N uptake and crop yield has been assessed. has been assessed after 20 cropping cycles. The initial soil was acidic (pH 5.8) with low soil organic carbon (4.3 g kg^{-1}) and CEC of $3.75 \text{ cmol (p}^+) \text{ kg}^{-1}$, mineralizable N ($187 \text{ kg ha}^{-1}$) and total N ($1280 \text{ kg ha}^{-1}$). After 20 cropping cycles, the soil organic carbon (SOC) content increased in all the fertilized treatments in the surface layer and with depth it decreased sharply from 15-30 cm to 30-45 cm layer. Treatments with balanced nutrition registered higher content of total N, organic N, mineralizable N and inorganic N both in surface soil and sub-soil. Not only the surface soil but also the sub-soil contents of total N, organic N and mineralizable N are significantly influenced by long-term use of fertilizer nutrients and manure under wet land intensive rice production system. Sub-soil contents of total N, organic N, mineralizable N, inorganic N, ammonium N and nitrate N have strong positive correlation with those of surface layer. SOC, total N mineralizable N and inorganic N are strongly correlated with each other in the same layer. Correlation of organic N and total N with nitrate N was however significant up to 30 cm depth and beyond that there was no correlation at 30-45 cm layer. From the results, it is concluded that application of nutrient in balanced and integrated manner (NPK + FYM) not only increased grain yield and sustainability of rice but also improved various pools of N in surface as well as sub-soil up to 75 cm depth under wet land rice-rice production system under subtropical climatic situation.</p> <p>1 - The overall idea presented by the paper is well acceptable. 2- English should be improved in all the papers. 3- should be Added to other References on the list. 4- The organization of the paper is convenient in general.</p>	
Minor REVISION comments	<p>1- The proofreading is required because there are some grammatical mistakes. 2- References could be reinforced by published papers for enriching.</p>	
Optional/General comments	<p>1- should be Added to other References on the list.</p>	

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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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