1) Industrial agriculture and climate crisis

As explained yesterday, when talking about nutrient and manure management, we are mainly focusing on nitrous oxide. 78 % of global nitrous oxide emissions come from agriculture and the IPCC Land report is very clear on the current situation : *« Nitrous oxide is continuing to accumulate in the atmosphere at an increasingly higher rate, driven primarily by increases in manure production and synthetic nitrogen fertiliser use from the mid-twentieth century. »*

Between 1960 and 2018, nitrous oxide emissions doubled, while the use of synthetic fertilizers increased ninefold over the same period.We think it is also useful to remind Parties that the last IPCC refinement adopted in june estimates that synthetic fertilizers have a bigger emission factor than organic fertilizers.

In addition to this, we cannot ignore other climate components and we need to consider in this workshop activities not included in the AFOLU sector such as energy needed (fossil gas with methane emissions) for the synthesis of fertilizers. It is essential to consider the full life cycle assessment.

We could also mention some studies showing that synthetic fertilizers has a potential negative impact on carbone cycling in soil which could impact on CO2 emissions.

In line with the presentation made yesterday, there is no point to talk about climate crisis without addressing major issues such as air and water quality that affect biodiversity and health : for instance fine particles that lead to major health issues but also nitrates contamination of water ressources that deplete biodiversity.The IPBES report adopted this year specifically targets fertiliser as the main cause of the creation of 400 dead zones in the ocean with a total area larger than that of the UK.

Last but not least, and because many countries are facing social crisis in their agriculture sector, we have to highlight that synthetic fertilizer prices are notorious for going up very fast, and down very slowly. This situation seriously compromises the autonomy of farmers by placing them in a situation of increased vulnerability to the financialization of agricultural markets. Especially in the face of climate change where fossil fuel prices will be uncertain.

The topic of this workshop is very illustrative of the role of industrialised agriculture in the climate crisis : the industrialisation of agriculture is characterized by key elements such as specialisation of territories leading to increased use of synthetic fertilizers, more industrial livestock with excess of manure and less livestock-diversified crops systems to value the manure. We are facing a vicious circle.

2) Agroecology as a solution to restore a natural nitrogen cycle

Time is running out : unaffordable and unproven technologies are a slippory slop that we don’t want to engage in, in the face of climate emergency. We need to build on proven knowledge such as agroecology.

Intercropping or crop rotation with diversified nitrogen-fixing leguminous plants is an agroecological practice to be supported in public policies, for instance through subsidies (as mentioned yesterday on CAP by the EU). It is important to recall that leguminous have a neutral nitrous oxide balance according to the IPCC.

On restoring natural nitrogen cycle, the IPCC Land report is also very clear : *« Perennial grains hold promises of agricultural practices which can significantly reduce soil erosion and nutrient leakage while sequestering carbon. When cultivated in mixes with nitrogen-fixing species such polycultures*

they also reduce the need for external inputs of nitrogen - a large source of greenhouse gas from conventional agriculture. »

As a second source of nitrogen, manure and other compost should be considered in an integrative system approach that associate sustainable livestock and mix crops. Industrial livestock with unmanageable manure must end.

3) What to be done by member States ?

- Promote adoption of agroecology practices into adaptation strategies, NAPs, NDCs, farmer extension services

- End subsidies for synthetic fertilizers and fossil fuel projects and reallocate those funds for agroecological transition

- Consider environmental taxation of damages caused by synthetic fertilizers as a public policy tool

- Make sure to take into account biodiversity and social dimensions in the evaluation of the data considered to enhance synergies

- Shift in diets (needed to increase diversified leguminous for human consumption and reduce industrial livestock) can and has to be supported by public policies in industrialised countries and in richest way of living. It could be then an idea a future workshop.

Conclusion :
We want to express our surprise on the fact that one of the major lobby group for synthetic fertilizers is being heard today. Not so fun fact : Just to recall that one of its active member, Yara, is currently investing hundred millions of dollars in fossil fuel projects in Mozambique and Tanzania when science is clear : to comply with the Paris Agreement and to minimize the irreversible consequences of global warming, no new fossil fuel development projects - oil, coal or gas - should be undertaken.