Summary of Posters developed during the workshop at the 2nd BASF Fireside Chat 2015

Studienhaus St. Johann, Albersweiler
March 26-27, 2015

USA

1. No need to regulate, the farmer wants to be in the lead
2. Selected Challenges:
    a. N management: stakeholders are Farmers, Scientists, Industry, Water officials, Environmental groups; focus on water quality
    b. Education: farmer drives the change in N management
    c. Metrics + Data: important to show what N management is useful, farmer in the lead, this data needs to be captured and communicated
    d. Technology/Products: leaders in new products are needed (e.g. like BASF)

3. Barriers:
    a. Fear of change with farmers,
    b. Need to be convinced by other farmers preferably.
    c. Costs need to be sustainable
    d. Sometimes need to have partnerships with people who don't make you feel comfortable (e.g. water companies)
    e. Law suits can drive policy with sometimes unwanted results

South America

1. Quantify emission of livestock in an integral approach: (Cooperation between Industry and Science)
2. Cross-check with farmer practice
3. Develop Formulations and Technologies (with Partners) to reduce emissions in life stock.
4. Assess efficiency of inhibitors in no tillage and straw residues
5. Integrated communication strategy on the best practices

Africa

1. Selected challenges

a) Too much N in Lake Victoria and too little in the field for crop productivity: a paradox

b) Insufficient understanding of the actual percent contribution of each source to Lake N
c) Insufficient understanding of the cropping systems' effects to N use efficiency
d) Insufficient understanding of effects of integrated agriculture and livestock systems to N use efficiency
e) Identification of the drivers of change that could have significant positive effects on the enforcement of policies intended to increase N use efficiency including control of erosion and runoff
f) Establishment and enforcement of quality standards for wastewater treatment and discharge to water bodies, recycling of biosolids, livestock and manure management, and fish industry among others

2. What is the most pressing issue for each stakeholder? What is the barrier? Who should act?

2.1 Key stakeholders

- Farmers and their organizations
- Regulatory bodies and policy makers
- Industry (local, regional, and international based on the type of critical issue)
- Scientific community
- Civil society

2.2 Farmers

2.2.1 Key issue

- ✓ Food security and income

2.2.2 Barriers

- ✓ Access to finance
- ✓ Access to effective extention services (knowledge)
- ✓ Access to inputs' and outputs' markets including information

2.2.3 Who should act?

- ✓ For finance: governments for smart subsidies in the short-term and financial institutions in the mid- and long- term
- ✓ For knowledge: governments and agricultural NGOs through application of ICT technologies (Farm radio international, mobile phones) and other extension materials
- ✓ For markets: private sector for commercial information brokerage and capacity building of agro-dealers

2.3 Regulatory bodies and policy makers

2.3.1 Key issue

- ✓ Supporting sustainable growth and delivery aspiration goals for the region for food security, nutrition, income, and health

2.3.2 Barriers

- ✓ Insufficient scientific information to inform policy decisions
- ✓ Insufficient capacity (human and finance) to enforce existing policies, as well as to draft or revise policies
- ✓ Insufficient interaction between various stakeholders including industry, scientists, regulatory officers, and policy makers

2.3.3 Who should act?

- ✓ Local, regional, and international scientists
- ✓ Regulatory organizations
- ✓ Governments
- ✓ Development partners
- ✓ Industry
- ✓ Champions: including NGOs and international organizations (cases studies for cooperation)

2.4 Industry

2.4.1 Key issue

- ✓ Improving performance (business opportunities)

2.4.2 Barriers

- ✓ Infrastructure for transport and adequate storage
- ✓ Finance for working capital particularly for the local SMEs
- ✓ Enabling environment in terms of policies and administrative costs

2.4.3 Who should act?

- ✓ Governments and development partners
- ✓ Industry for storage
- ✓ Financial institutions for the capital including microfinance
- ✓ Regional organizations for policies and reduction of administrative costs, as well as regional integration to facilitate trans-boundary trade through harmonization and mutual recognition

2.5 Scientific community

2.5.1 Key issue

- ✓ Application of science to ensure that the research findings are used by the various stakeholders

2.5.2 Barriers

- ✓ Insufficient regional integration including harmonization and mutual recognition
- ✓ Insufficient funding for research
- ✓ Insufficient assessment of the profitability of recommended solutions for sustainable intensification
- ✓ Lack of effective innovation and creativity platform

- ✓ Insufficient focus on local issues to address global challenges by acting locally

2.5.3 Who should act?
- ✓ Development partners (i.e. governments, donors, regional and international organizations)
- ✓ Innovation platforms

2.6 Civil society

2.6.1 Key issue
- ✓ Good governance and accountability

2.6.2 Barriers
- ✓ Technical and financial capacity, education, and access to adequate information
- ✓ Enabling environment

2.6.3 Who should act?
- ✓ Each and every stakeholder
- ✓ Governments
- ✓ Regional and international organizations

Asia

Overall:

N-index to show product is produced well

1. regulator to provide transparency about the food origin
2. Science to develop index to describe the system and to provide the information
3. Communicate the story to public
4. Communication of indirect effects of food and food production on health to consumer

A) Japan: 'Tea chocolate'
   a. Manure distribution and use
      i. Farmer: Connect to crop farming
      ii. Regulation: closer link to subsidy system
      iii. Cost effective processing, e.g. Lignite, DMPP
      iv. Demonstrate the gain from manure
      v. Get public engaged
   b. Eco-farmer concept in paddy rice:
      i. Farmer: Get more farmers involved
      ii. Regulation: Support it with subsidies
      iii. Science: better cultivars to improve uptake
      iv. Raise consumer awareness

B) India: 'N-losses are higher than crop use'
   a. Make available dose/response information
      i. Regulators: N-use in crop → no information

ii. Industry: Tolls like NI, Di, UI, must show more consistency
iii. Science: Work on N demand of various genetics

b. Improve quality of inoculants
    i. Industry: Tools must show more consistency, implement Quality Monitoring system

c. Limit N2O emission in urea-based wheat system
    i. Regulators: enforce existing regulation on animal farms and burning of residual cakes
    ii. Industry: make fertilizer companies responsible for proper use
    iii. Science: Soil testing and label recommendation

d. Utilize mobile technology and provide advice (farmers are willing to pay):

e. Industry/Science: Farm credit system to be managed by input provider

f. Use of postal service to deliver fertilizer

C) Australia:

a. Avoid 'N-mining' and Organic matter loss in dry land
    i. Farmer: Use the nutrient balance
    ii. Science: demonstrate that N will not get lost

b. Reduce N overuse in dairy system
    i. Industry: use efficient NH4 management
    ii. Science: how can nitrogen be retained

c. Improve NUE in vegetables
    i. Regulator: educate consumer that 'green' is not 'healthy'.
    ii. Science. Study coating approach (e.g. BASF) and develop fertilizer decision support tool

D) China: 'too much nitrogen is used'

a. Change the advice system:
    i. Farmer: initiative on farm level
    ii. Regulator: policy to become specific on reduction
    iii. Industry: convert manure into a viable fertilizer
    iv. Science: technology support

b. Reduce N in vegetables and fruits
    i. Agriculture companies to operate farms
    ii. Science: list of priorities in technology

c. Optimize the fertilizer technology
    i. Regulator: reduce subsidies for N-fertilizer
    ii. Science: Show costs caused by overuse of nitrogen
    iii. Farmer: Increase the size of farms to make overall production more efficient

Europe

Measures and stakeholders:

1. Increase consumer awareness: better and more information and communication (topic for industry and food industry
2. Increase R&D in soil science: work more on precision farming and how to measure nutrient content
3. Farmer awareness and knowledge:
    a. scientists to educate farmers and increase farmer awareness,
    b. farmer associations and farmers unions should take action
4. Increase NUE:
    a. Farmer: 4R precision farming, catch crops and tillage;
    b. Regulation: legislation for better NUE, fertilizer additives and machines, precision farming sensors and tillage
5. Livestock management:
    a. Farmer: storage and application and manure treatment,
    b. Regulators: guidelines and regulations
    c. Industry/others:Breeding, feeding and manure treatment
6. Farmer income:
    a. Regulators or retailer/Food industry: implement incentives + subsidies linked to NUE
7. Improve existing legislation:
    a. Regulators: smart use of legislations; evaluate and improve existing legislations;
    b. Scientists to advise policy makers
8. Improvements of measures: development of monitoring tools to facilitate assessment of measures effectivity
9. Build on monitoring systems in eastern Europe: Foster communication between regulators, government and science; create networks and increase funding to support these measures.
10. Recycle nutrients as much as possible: create legislative framework for circular economies, Develop and support waste recycling technologie