WORLD METEOROLOGICAL ORGANIZATION
COMMISSION FOR AGRICULTURAL METEOROLOGY
IMPLEMENTATION AND COORDINATION TEAM MEETING (ICT)
MANAGEMENT GROUP MEETING (MGM)

Focus Area 4 – review status and activities
Capacity Building in Agricultural Meteorology
Chair: Elena Mateescu (Romania)
Co-Chair: Julie Ukeje (Nigeria)

28 – 30 November 2017
GENEVA, SWITZERLAND
WMO HQ, Room C2
Membership for ET 4.1 and ET 4.2

ET 4.1 - Capacity Building
Leader: Julie Ukeje (NIGERIA) – RA I
- James Adamu (NIGERIA) – RA I
- K.K. Singh (INDIA) – RA II
- Maria Elena Fernandez-Long (ARGENTINA) – RA III
- Manasah Mkhabela (CANADA) – RA IV
- Christa Pudmensky (AUSTRALIA) – RA V
- Josep Eitzinger (AUSTRIA) – RA VI

ET 4.2 - Guidelines on Education and Training in Agmet
Leader: Sayed Masoud Mostafavi Darani (I.R.IRAN) – RA II
- Rebeca Manzou (ZIMBABWE) – RA I
- Feiyun Yang (CHINA) – RA II
- Homero Bergamaschi (BRAZIL) – RA III
- Patrick Cherninski (CANADA) – RA IV
- Ahmad Mohamed Zaki (MALAYSIA) – RA V
- Valentina Grigoryan (ARMENIA) – RA VI
- Joon Kim (REPUBLIC OF KOREA) - GCREAM
(a) Review and report on the potential synergies between WMO training programmes (e.g. crop modeling, GIS and remote sensing applications in agrometeorology, climate smart agriculture, water footprint etc.) and other international training programmes in order to identify needs/constraints/opportunities of trainees to understand and use dedicated services and products;
(b) Identify training needs required to improve agricultural meteorological services that meet user requirements;
(c) Recommend which training activities (i.e. modules, exercises, distance learning, seminars) should be further used in agrometeorological training
(d) Review the agrometeorological training opportunities and methodologies from funded projects and in collaboration with the Global and National Agrometeorological Societies;
(e) Review the WMO Global Campus Initiative and make recommendations how to integrate the work of the GCREAMS with this initiative.
ET 4.2 – Expert Team on Guidelines on Education and Training in Agromet
Terms of Reference for ET 4.2

(a) Review existing WMO publication on *Guidelines for Curricula in Agricultural Meteorology*, Supplement No. 2 (WMO-No. 258) and the *Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology* (WMO-No. 1083);
(b) Transform the existing curricula in (WMO-No. 258) into learning outcomes per WMO-No 1083;
(c) Develop a new supplement for WMO-No 1083 for agricultural meteorology;
(d) Make an inventory of existing available institutions that offer education and training in agricultural meteorology
(e) Make an inventory of existing and available agricultural meteorological textbooks for a range of levels of formal education and informal training;
(f) Make recommendations based on the review in (e) to CAgM on which agricultural meteorological textbooks are suitable.
Membership for TT 4.1 and TT 4.2

TT 4.1 - Developing Online Community of Climate and Agricultural Production
Leader: Lucy Samvura (ZIMBABWE) – RA I
- Alaaeldin Awwad (EGYPT) – RA I
- Minki Noh (REPUBLIC OF KOREA) – RA II
- Jeronimo Garcia (PERU) – RA III
- ……………………………..– RA IV
- ……………………………..– RA V
- Daniel Alexandru (ROMANIA) – RA VI

TT 4.2 - Identifying Agmet Publications and GAMP
Leader: Nicolas Holden (IRELAND) – RA VI
- Mbanguerngaye Kossadoum (CHAD) – RA I
- Khalid Mahmood Malik (PAKISTAN) – RA II
- Irene Barna Tan(ARGENTINA) – RA III
- ……………………………..– RA IV
- ……………………………..– RA V
- Zoltan Dunkel (HUNGARY) – RA VI
TT 4.1 – Developing Online Community of Climate and Agricultural Production
Terms of Reference for TT 4.1
(a) Evaluation of the online use of various WMO agricultural meteorological publications;

TT 4.2 – Identifying Agmet Publications and GAMP
Terms of Reference for TT 4.1
(a) Supplement to the Guide to Agricultural Meteorological Practices (WMO-No. 134) by contributing a list of updated scientific articles to supplement each GAMP chapter; Updating of the scientific articles could be delivered by inventory of the most recently proceedings/books (published after 2012) and by accessing of the ResearchGate Platform.
The meeting agenda included discussions on the review of the Terms of Reference (TORs) of the CAgM Implementation and Coordination Team and on the future activities to be developed within the WMO Agrometeorological Programme – 4 FAs activities over the 2014-2018 period.
World Meteorological Organization
12-14 April 2016, Bucharest, Romania
Joint Commission for Agricultural Meteorology (CAgM) and Commission for Climatology (CCI) - Session on Capacity Development:
- COMMISSION FOR AGRICULTURAL METEOROLOGY CAgM - Focus Area 4 Expert Teams: Capacity Building in Agricultural Meteorology (CAgM-OPCAME 4)
- COMMISSION FOR CLIMATOLOGY (CCI)
CCI OPACE 5: Capacity Development
The meeting agenda included discussions on the current status of FAs activities, global initiatives, review pending issues and implementation plans for CAgM Session in 2018.
1. Completed Tasks & Success Stories: Very little portion of the assigned tasks (b & d above) was carried out and partly completed with no success stories, as very few experts responded to requests for inputs; only Experts KK Singh (from India) and Christa (from Australia) acknowledged the requesting mails but with expressions of challenges arising from WMO Secretariat’s delay in providing working materials. Unfortunately, there does not seem to be submission of any earlier preliminary report by Barnabas. My efforts in obtaining inputs from the RTC of Nigeria resulted in the attached Basic Instruction Packages (BIPs 107,212 & 310) with respect to task (d) and the following training needs in response to task (b):
- To have qualified service providers through ensuring they have basic agromet trainings
- To have educational infrastructures that can address some agromet services needs.
- To have access to basic agromet facilities.
- To develop human resources through training and provision of educational materials.
- To provide fellowship awards to acquire knowledge and skills.
- To develop practical knowledge in agromet in support of the farming community.
- To train intermediaries to assist the farming community.
- To develop courses for specific programmes to better support agromet services.
- To introduce competency frameworks that will define standards and recommend practices for services of agromet.
- To provide the service providers with WMO’s guidance materials, such as, technical regulations, WMO guides, manuals, competency frameworks.
- To introduce training courses and programmes to better support the competency frameworks.

2. Outstanding tasks & Constraints/Challenges:
Tasks a, c and d. As already stated, constraints to achieving these was mainly lack of working materials from WMO Secretariat.

3. Reviewed tasks/Future tasks (2018-2022) & Expected Deliverables:
Strongly recommend downward review of the number of tasks, as well as set new timelines. The expected deliverables (i, Development of Agromet Training Modules, ii, Communication and User Interface and iii, Interaction with Global and National Agricultural Meteorological Societies) will be very unlikely if no response from the Experts.
Maybe Leaders of active Teams can share their experience?
Chapter 1. Introduction
1.1. Background and overview
1.2. Opportunities, constraints and limits for education and training in Agrometeorology

Chapter 2.
Task a) Review existing WMO publication on Guidelines for Curricula in Agricultural Meteorology, Supplement No. 2 (WMO-No. 258) and the Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology (WMO-No. 1083)

Chapter 3.
Task b) Transform the existing curricula in (WMO-No. 258) into learning outcomes per WMO-No 1082
3.1. Transform the existing curricula in (WMO-No.258) into learning outcomes per WMO-No. 1082
3.2. Recommendations on training needs to improve agrometeorological services

Chapter 4.
Task c) Develop a new supplement for WMO-No 1083 for agricultural meteorology
4.1. Case study on Agricultural Meteorology formal training syllabuses in I.R.Iran (RAII)
4.2. Case study on existing available institutions that offer education and training in agricultural meteorology in I.R.Iran
4.3. Case study on existing available institutions that offer education and training in agricultural meteorology in Zimbabwe
4.4. Case study on existing available institutions that offer education and training in agricultural meteorology in Brazil
4.5. Case study on existing available institutions that offer education and training in agricultural meteorology in China
4.6. existing available institutions that offer education and training in agricultural meteorology in some countries

Chapter 5.
Task d) Make an inventory of existing and available agricultural meteorological textbooks for a range of levels of formal education and informal training
5.1. Inventory of existing and available agricultural meteorological textbooks

Chapter 6.
Task e) Make recommendations based on the review in (d) to CAgM on which agricultural meteorological textbooks are suitable

Chapter 7.
Recommendations

References
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<tr>
<th>TASKS</th>
<th>Overall assessment and general recommendations</th>
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<tbody>
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<td>Training programmes</td>
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<td><strong>b)</strong> Identify training needs required to improve agricultural meteorological services that meet user requirements;</td>
<td>NHMSS and Ras needs</td>
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| **c)** Recommend which training activities (i.e. modules, exercises, distance learning, seminars) should be further used in agrometeorological training | - List of training activities including modules, seminars for different levels and stakeholders (decision makers, farmers, social media advisors, etc)  
- Regional platform (Ras) for sharing examples of good practices and exchange of information |
| **d)** Review the agrometeorological training opportunities and methodologies from funded projects and in collaboration with the Global and National Agrometeorological Societies; | - FAO Farmers Field Schools including thematic regional training based on DRR impacts and best practices examples in the most vulnerable countries to extreme phenomena |
| **e)** Review the WMO Global Campus Initiative and make recommendations how to integrate the work of the GCREAMS with this initiative. | GCREAM Centers and RTCs                                                               |
## RECOMMENDATIONS

**ET 4.2 - Expert Team on Guidelines on Education and Training in Agromet**

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<td>WMO-No. 258 (2009 edition) to be incorporated in the WMO No. 1083 (2012 edition) in PART II. Basic instructions package for meteorologists, Chapter 2.4 – Agrometeorology/Agricultural meteorology</td>
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<td>b) Transform the existing curricula in (WMO-No. 258) into learning outcomes per WMO-No 1083;</td>
<td>Guidance materials and competency based training – curriculum planning</td>
</tr>
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| c) Develop a new supplement for WMO-No 1083 for agricultural meteorology; | - Category of personnel level – qualification for agrometeorologist and technicians (entry level, mid-level, senior-level)  
- Learning outcomes structure for agricultural meteorology science including description of categories of knowledges and Basic instruction packages (BIP-AgM) |
| d) Make an inventory of existing available institutions that offer education and training in agricultural meteorology | Inventory list for each RAs |
| e) Make an inventory of existing and available agricultural meteorological textbooks for a range of levels of formal education and informal training; | Inventory text books for each RAs |
| f) Make recommendations based on the review in (e) to CAgM on which agricultural meteorological textbooks are suitable. | Printed, on-line, open access |
28 – 30 November 2017
Strategic direction of CAgM for 2018-2022

FOCUS AREA 4: Capacity Development in Agricultural Meteorology
- Development of Agromet Training Modules
  Training needs required to improve AgMet services/products especially for local farmers: for ex. ECWMF – seasonal climate forecasts for agriculture sector; NHMSs at regional, national and local level based on their specific school infrastructure and different topics
- Communication and User Interface:
  NHMSs - Agrometeorological Open Day and thematic social media events or Week of adaptation to CC impact on agriculture – regional workshop at national/regional level
- Interaction with Global and National Agricultural Meteorological Societies:
  Enhancing partnerships/protocols and cooperation including definition of roles and research projects on capacity development of agromet services/products and human resources
• 17 GOALS TO TRANSFORM OUR WORLD addresses a range of social needs including education, health and social protection by developing CC measures and environmental protection. Each goal has specific targets to be achieved over the next 15 years.
• Governments are expected to take ownership and establish national frameworks for the achievement of the 17 Goals.
• International and regional follow-up and review will be based on national-level analyses and contribute to follow-up and review at the global level.
• Climate change is already having an impact on socio-economic sectors including agriculture, water security, energy, public health and so on.
• Goals 1, 2, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16 and 17 / common actions between agriculture services and research, food supply and rural activities, weather and climate change in order to reduce the extreme events impacts and to improve the efficient management of agromet services in future CC
Thank you!!!

Elena, Julie and Sayed…