Drought in Republic of Srpska

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REPUBLIC HYDRO METEOROLOGICAL SERVICES OF REPUBLIC OF SRPSKA, Bosnia and Herzegovina

DriDanube- Drought Risk in Danube Region
Project co-funded by European Union funds (ERDF, IPA)
Training course on drought risk assessment 6-8 November, OMSZ, Budapest (Hungary)

FOCUS ON AGROMETEOROLOGY - organisation

Ministry of Agriculture, forestry and water management

Republic Hydro Meteorological Service of Republic of Srpska, B & H

Sector for Meteorology

Department for meteorological observation and forecast

Department for agrometeorology

Department for climatology
FOCUS ON AGROMETEOROLOGY

✓ The activity of Agrometeorological Service is organised through the Republic Hydrometeorological Service of Republic of Srpska, as part of the Department for Climatology and Agrometeorology.

✓ The goal of operative tasks and applied research carried out in the Department for Agrometeorology is to contribute to the efficiency of agricultural production in Republic of Srpska and its sustainable development.

✓ Various products of operative activities, like agrometeorological analyses, forecasts and warnings are used in setting the dates for sowing and harvesting, planning of measures of economic policy and other modes of short-term and long-term planning of activities in agriculture.

✓ these activities are carried out in cooperation with the advisory service of the Ministry of Agriculture, Forestry and Water Management.
Focus on agrometeorology

Programme of operative jobs and tasks covers:

- processing and analysis of agrometeorological data agrometeorological yearbooks: phenological, soil temperature;
- permanent monitoring and analysing of actual meteorological conditions and making of: seven-day, decade and monthly agrometeorological bulletins and annual analyses of the influence of meteorological factors on growth, development and yield of agricultural crops, and, when necessary, also preparation of urgent agrometeorological information, analyses and warnings.

Within applied agrometeorological research, the focus is on:

- studying of agroclimatic potential on the territory of Republic of Srpska, monitoring of their changes and assessment of future changes as consequences of climate fluctuations and climate changes in the region;
- studying of climate extremes and meteorological phenomena causing greatest damages in agriculture and their consequences (drought, extremely high and low air temperatures, storms with hail).
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FOCUS ON AGROMETEOROLOGICAL BULLITEN

moisture conditions
SPI Index

SPI12 - September 2018

Temperature conditions in September
Precipitation in September
moisture conditions
SPI Index
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Monitoring of drought - Hargreaves ETo
Monitoring of drought
YIELD 2017.

- Overall losses in maize production is around **50%**
- Estimation of the expert services of the Ministry of agriculture, forestry and water management and Agricultural Institute of Republic of Srpska

<table>
<thead>
<tr>
<th>Region</th>
<th>Area with corn (ha)</th>
<th>Expected yield (t)</th>
<th>Estimated decrease in production</th>
<th>Expected yield after drought (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Đorőj</td>
<td>34,079</td>
<td>238,551</td>
<td>50%</td>
<td>119,276</td>
</tr>
<tr>
<td>Rijeljina</td>
<td>31,783</td>
<td>222,481</td>
<td>50%</td>
<td>111,240</td>
</tr>
<tr>
<td>Gradiska</td>
<td>22,600</td>
<td>158,199</td>
<td>60%</td>
<td>63,279</td>
</tr>
<tr>
<td>Prijedor</td>
<td>14,923</td>
<td>104,458</td>
<td>50%</td>
<td>52,229</td>
</tr>
<tr>
<td>Banja Luka</td>
<td>10,905</td>
<td>76,335</td>
<td>50%</td>
<td>38,167</td>
</tr>
<tr>
<td>Sukobac</td>
<td>350</td>
<td>2,450</td>
<td>50%</td>
<td>1,225</td>
</tr>
<tr>
<td>Trebinje</td>
<td>150</td>
<td>1,050</td>
<td>50%</td>
<td>525</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114,789</strong></td>
<td><strong>803,523</strong></td>
<td></td>
<td><strong>385,942</strong></td>
</tr>
</tbody>
</table>
Monitoring of drought
YIELD 2017.

photo: Agricultural Institute of Republic of Srpska
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- Losses in Herzegovina around 20%

Agrofin vineyards, Trebinje, Herzegovina
Monitoring of drought - DMCSEE

DROUGHT MONITORING BULLETIN

12th June 2017

HOT SPOT

Figure shows accumulated water balance anomaly for the time period from 22nd March 2017 to 20th May 2017. It was the driest 60-day window across the region since early March with vast area of dry condition spreading across the region. Water deficit of up to 120mm was present in eastern Turkey and north-western Balkan Peninsula while several scattered parts in southern half of the region, especially in Greece and Albania, experienced extreme drought with water deficit of 180-210mm.
Monitoring of drought - cooperation with DMCSEE

Positive water balance in May across the entire Bosnia and Herzegovina boosted vegetation growth in all parts of the country. Graphs for both Laktasi in the north and Trebinje in the south show high excess of vegetation cover in comparison to normal state, around 15% in both areas. According to FVC index, vegetation was developing as expected also in Bijeljina in eastern Bosnia and Herzegovina.
Monitoring of drought-IRRFIB MODEL

✓ It counts the water balance and the available water around the root system

Input data:

✓ Type of land
✓ Water capacity of the land
✓ Pheno Phase
✓ Atmospheric conditions: precipitation and PET

Cooperation with DMCSEE/IRRFIB MODEL

Irrfib model simulates the water consumption by crops during their vegetation
Monitoring of drought-DRIDANUBE
Cooperation with Ministry of agriculture, forestry and water management
Reportes from field-12 regions

Estimated drought impacts on vegetation between 20 August – 2 September 2018
Cooperation with Ministry of agriculture, forestry and water management
Reportes from field - 12 regions

✓ Activities in the project are carried out in cooperation with the Ministry of Agriculture, Forestry and Water Management. Reporting on the condition of the soil and droughts from the terrain is carried out through the regional units of the advisory service of the Ministry of Agriculture.
✓ Promotion of the project at scientific meetings related to agriculture, as well as agricultural fairs
Monitoring of drought-DRIDANUBE

Estimated drought impacts on agriculture between 20 August – 2 September 2018
Monitoring of drought-DRIDANUBE
1. The Government of the Republic of Srpska has implemented and performs capital projects through the Ministry of Agriculture, forestry and Agriculture of the RS (MAFWM of the RS):
   - Construction of irrigation system in Bijeljina - completed 2014 * Area 622 ha
   - Construction of irrigation system in Pelagićevo - Completed 2014 * Area of 202 ha
   - Construction of irrigation system in Bratunac - Completion May 2018 * Area 436 ha
   - Construction of irrigation system in Ljubinje * Started works * Area 250 ha
   - Construction of irrigation system in Maglajani ➢ Area 130 ha, ➢ the preparation of the tender documents.
   - Construction of irrigation system in Trebinje * Beginning of field work * Area of 860 ha
2. In addition, in 2017-2018, and according to the provisions of Article 2 of the Rule book on the conditions and method of using funds for procurement of irrigation equipment (“Official Gazette of the Republic of Srpska” No. 101/17), and in connection with the Decision of the Government of the Republic of Srpska on the routing of Resources for the Supply of Irrigation Equipment (“Official Gazette of Republika Srpska” No. 87/17), a public invitation for procurement irrigation equipment. In this regard, 482 beneficiaries are allowed to co-finance 40% of the amount for the purchase of irrigation equipment.

3. The Agency for professional services in agriculture (Agricultural Advisory service) has purchased equipment for monitoring the amount of precipitation, which completes the monitoring of the collection of the hydrometeorological data.
4. At the beginning of the year, the MAFWM of the RS sent the UNCCD request for assistance for the funds necessary for the development of the Action Plan for Combating Drought (DROUGHT MANAGEMENT PLAN - Action Plan for the Fight against Drought), separately by the entities in BIH: RS and FBIH, according to separate competencies, because it recognized the importance for the preparation and adoption of this document, still did not get the necessary funds for this important document.

Source: MAFWM of the RS (prepared by Mihajlo Markovic, external expert for the DriDanube project in cooperation with Ms. Svetlana Lazic, from the MAFWM of the RS)
Conclusions

✓ Monitoring of drought is initiated and in operation state

GAPS:
✓ Lack of drought management and Drought Master Plan
✓ No policy / strategy related to the drought
✓ No forecast and warning system
✓ Drought monitoring should be more integrated and coordinated between Ministry of Agriculture, forestry and water management and RHMZ Republic of Srpska
✓ final integrated with all beneficiaries in Republica Srpska
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FOCUS ON PROJECT UNDER MINISTRY

Donji Pridje, Doboj

Info

- Last model execution: 2018-10-06 06:01:09
- Next scheduled model execution: 2018-10-06 10:00:00
- Last measurement: 2018-10-06 08:00:00
- Last forecast cycle: 2018-10-06 02:00:00

Station Alerts

There aren't any notifications for this station at the selected time period.

Report a disease

Transnational Programme

DriDanube

rhmz@teol.net Republic Hydro Meteorological Services Of Republic of Srpska, B & H www.rhmzrs.com