

From Development to Management:

Meteodat's concept for an integrated Water Budgeting

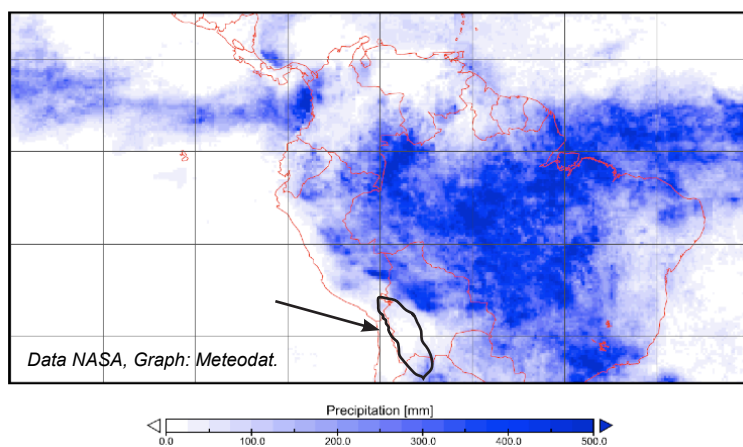
In many dry areas of the world water is already a scarce good. Water is needed for drinking water, agronomy, power production, mining, industry, tourism and other uses. As a consequence, mediation among different water users is considered more and more important.

Demand for water resources will increase sharply because of demography, rising irrigation demand in agronomy, new mining and industrial activities. Over-exploitation of water resources is a real danger, as e.g. already pertinent in some regions of India. In addition, there is the threat of climate change.

For many dry regions of the world, longer and more frequent dry spells and/or declining runoff from glaciers are predicted for the decades to come.

So, Meteodat is working in building sustainable water management and budgeting concepts. This, in collaboration with ART Agroscope; Comunidad Andina; Governments of Peru, Colombia, Ecuador and Bolivia; IDEAM Colombia; MeteoSwiss; NASA; Schwank Earthpartner; SENAMHI Peru; Swiss Development Agency; Swiss Research Institute for Forest, Snow and Landscape; University of Geneva; University of Zurich; World Bank and WOTR India.

Precipitation January 2011 (Estimation TRMM 3B43)



Precipitation estimation from space: TRMM-3B43 precipitation estimation of January 2011. The Bolivian Altiplano (marked area) was affected in January 2011 by one of the lowest precipitation sums for January in the last 50 years. This is well estimated by this remote sensing product.



Over-exploitation of Groundwater resources is a severe problem in many regions of the world.

Meteodat could gain extensive experience in India and South America about concrete problems of water related problems of (smallhold) farmers, agronomists, insurance specialists, irrigation engineers and others facing water scarcity. Especially noteworthy is – as an example for a new tool to assess water related problems – an important project, where Meteodat is strongly involved: Rainfall estimation from space with the Tropical Rainfall Measuring Mission (TRMM) (see figure left above).

Meteodat has co-coached a study focused on the possibilities and limits of rainfall estimation from space, focused on rain scarce areas. The results have been published in a joint paper of University of Zurich, SENAMHI Peru, Universidad la Molina, NASA and Meteodat. The outcome of this study can be used e.g. as a basis for agronomical drought monitoring in rain scarce areas.

As a result of these activities, Meteodat is aiming – together with its partners – at achieving an integral concept encompassing natural conditions and human dimension of the water issue. It will comprise the elements of the water cycle, as well as its related problems of erosion resp. desertification and the largely diverging water allocation demands of the users in the dry areas of the world. Incorporating stakeholders from the individual farmer to communities, companies, governmental and nongovernmental organizations is thereby a necessity.



Agrometeorological station in a rain scarcity zone of India.

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