



The 3<sup>rd</sup> International Forum  
on Water and Food  
Tshwane, South Africa  
November 14 – 17, 2011



Co-hosted by:



---

## Determining Water Use Through Thermic Time Methods

**RUBEN DARIO ESTRADA**

Centro Latinoamericano para el Desarrollo Rural (RIMISP), Chile

[rubenda115@googlemail.com](mailto:rubenda115@googlemail.com)

**Session: Basin (Andes) and Benefit Sharing Mechanisms**

### Key Message

When water is the key input in agricultural production, the application of thermic time methods (TT) and the measurement of radiation accumulation in phenological states substantially modifies hydrological balances and the price of m<sup>3</sup> for both producers and consumers.

## Summary

Given the huge difference in the water shadow price for producers and consumers, there is usually the possibility to allocate water for human consumption or storage. When water is used for agricultural production these differences could be small and other conditions to compensate for water use are required to make this type of project attractive and to share benefits from it.

The application of TT and intensity and quality of solar radiation is the usual approach to determine if water should be allocated either to irrigation or to on-farm use. The TT method guarantees that water allocation responds to an economically and socially competitive system since it generates a production optimum. Additionally, this method helps to determine areas with high production potential.

Market mechanisms are indicated for poverty reduction purposes in cases where water externalities are not significant. They represent a good option for many sites in Africa and for mountain areas.