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A Typology of Farmers' Drought Management

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Abstract: Drought is a slow-onset natural disaster that has widespread consequences. Planning at macro and meso levels often assumes that farmers react to and manage drought in similar ways. If this assumption of homogeneity is incorrect, the potential effectiveness of drought mitigation efforts is likely to be dangerously inhibited. This research investigated the validity of the homogeneity assumption among Iranian farmers. More specifically, it examined whether farmers use different strategies to mitigate drought and, if so, whether a typology to classify their management approaches can be developed. A multistage, stratified random sample (n=258) of farmers in Fars province who suffered drought was surveyed. The research identified that different strategies were used and that a drought management typology comprising three types of drought management could be constructed: (i) technical (TDM) (ii) psycho-economic (PDM) and (iii) integrated (IDM). These three drought management approaches were discussed and recommendations made to improving drought mitigation and preparedness.

Key words: Drought management % Typology % Impact % Farmers % Iran

INTRODUCTION

Drought is a normal, recurrent climate feature [1] which, if badly managed can lead to a loss of crop production, food shortages and, for many, starvation [2]. It originates from a deficiency of precipitation over an extended (although not indefinite) period, although its characteristics vary significantly from one region to another [3]. However, drought should not be viewed merely as a physical phenomenon; it has profound impacts on society, socio-economic factors contribute to the social experience of drought and social activities may lessen or exacerbate the physical aspects of drought [3,4]. Particularly over the last decade, unsustainable development and improper use of natural resources have increased vulnerability to drought in some countries, to the extent that even a small abnormality in climatic conditions has the potential to create disaster in drought-stricken regions [5].

Many consider drought to be the most complex but the least understood of all natural hazards, affecting more people than any other [6]. Yet, for all the damage it causes, it gets precious little public attention. Of all natural disasters, it is the most gradual and hard to predict. Confusion about its characteristics within the scientific and policy communities explains, to some extent, the lack of progress in drought preparedness in most parts of the world. The lack of a precise and universally accepted definition adds to the confusion: when does the lack of rain constitute a drought and how do we measure the degree of severity [7] Drought is difficult to define because its boundaries are unclear and so much depends on context and location [8]. Various scientific disciplines define drought differently with the critical variables being the intended use of the water and the time-frame [9]. The four main disciplinary definitions of drought are meteorological, agricultural, hydrological and socioeconomic [10]. The meteorological definition is based on a measurement of precipitation that is some percentage below normal [1,10]. As regions differ greatly in climate, this definition is very location specific. A hydrological drought is defined by the levels of surface and subsurface water in the system [10]. Agricultural drought refers to a time when the amount of water in the soil no longer meets the needs of a particular crop [1]. Socioeconomic drought refers to situations where the reduction precipitation has impact on the wellbeing of the affected community, in effect as a distortion in the supply and demand for goods and services. There is a flow-on ripple effect from

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