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Abstract. The grassland-based policy approaches are strongly linked with the livestock management because the livestock nutrition system which is based on grazing intensively particularly on hilly and remote areas. This situation has been predominantly reflected in planning as the interventions directed to regulating the grazing intensity (over-grazing) and erosion control. The most comprehensive and concrete interventions for the establishment of policies for grassland in the context of impacts, mitigating and adapting to climate change have been seen in the Strategic Plan (2010-2014) and Performance Programmes. The needed resources for implementing the measures regarding grassland management and climate change accounts for 6.5% of total budget in Performance Programme 2012 showing significant increase of importance given to climate change when compared with the Performance Programme 2011. The measures regarding erosion control in IPARD Programme may be classified as the practices for mitigation purposes although it is not implied as a measure targeted to climate change in the Programme.

Keywords. Grassland – Climate change – Planning – Strategic Plan (2010-2014) – Performance Programme.

Approches politiques sur les pâturages dans les documents de planification du Ministère de l'Agriculture, de l'Alimentation, et de l'Élevage en Turquie dans le contexte du changement climatique

Résumé. *Les approches politiques basés sur les prairies et les pâturages sont fortement liés à la gestion de l'élévage bétail à cause du système nutrition du bétail, qui est basé sur le pâturage en particulier sur les zones montagneuses et éloignées. Cette situation a été principalement reflété dans la planification des interventions visant à réguler l'intensité de pâturage (surpâturage) et le contrôle de l'érosion. Les interventions les plus complètes et concrètes pour la mise en place de politiques sur les pâturages dans le contexte de l'impact, l'atténuation et l'adaptation au changement climatique ont été vus dans le Plan stratégique (2010-2014) et des Programmes de performance. Les ressources nécessaires pour mettre en œuvre les mesures relatives à la gestion des pâturages et le changement climatique représentent 6,5% du budget total du Programme de performance 2012 montrant une augmentation significative de l'importance du changement climatique par rapport au Programme de 2011. Les mesures concernant le contrôle de l'érosion dans le programme IPARD peuvent être classés comme des pratiques à des fins d'atténuation bien qu'elle n'est pas impliquée en tant que mesure ciblée au changement climatique dans le Programme.*

Mots-clés. *Pâturages – Changement climatique – Planification – Plan stratégique (2010-2014) – Programmes de performance.*

I – Introduction

The effects of agricultural activities to global climate change accounts to 13% (Göl, 2007) while livestock are important sources of CH_4 accounting for one-third of global anthropogenic emissions of this gas. One of the mitigation options for livestock management is improving pasture quality especially in less developed areas since there has been observed proportionally greater increase in farm

gross margin and animal productivity (Alcock and Hegarty, 2006).The other mitigation practices in the context of grassland management and pasture improvement are managing grazing systems, grazing intensity and timing, increase productivity by alleviating nutrient deficiencies, fire management, species introduction with higher productivity and deeper roots and pasture rehabilitation implementations (Smith *et al*., 2007). In the case of adaptation practices to climate change, the implementations play a critical role as a key proactive measure for coping with likely impacts. Adequate policy is a prerequisite for successful preparedness (Mendelsohn and Dinar, 2009).

The great majority of Turkish livestock farming is extensive. Due to insufficient and costly domestic fodder production, farm animals' nutrient needs are mainly covered by grazing. The extensive system leads to intensive use of pastureland (overgrazing) so interacts as increased erosion (MARA 2008). Approximately 86% of land is suffering from some degree of erosion. In this context, erosion is seen on 54% of forest land, 59% of agricultural land and 64 % of pastures (MARA, 2010). Figure 1 shows the changes in land use and number of animals in Turkey between the years 2000 and 2010. The land under the permanent meadows and pastures accounts for 14.6 million ha which has increased about 2 million ha compared to year 2000. The number of bovine animals is 11.4 million and ovine animals are 29.4 million in 2010. Although there has been a decrease in the number of ovine animals, the number of bovine animals has increased compared to year 2000.

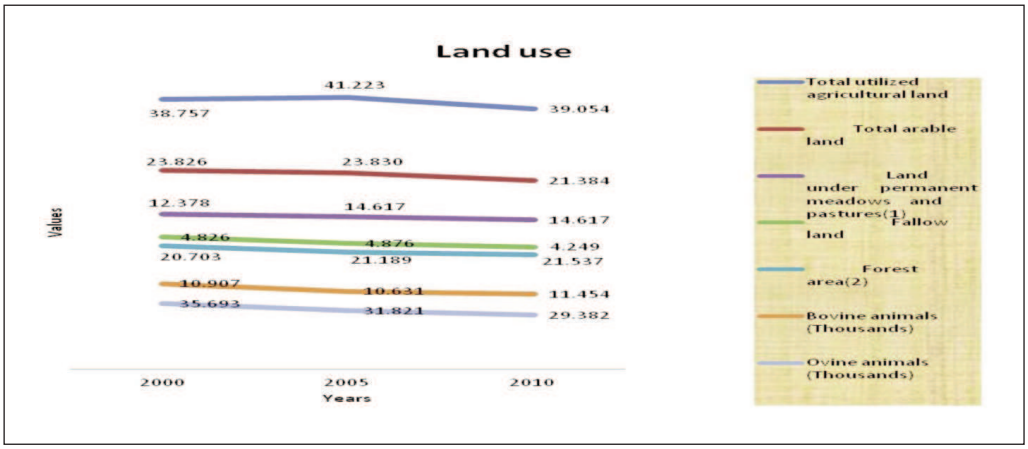

Fig. 1. The change in land use and number of animals in Turkey between 2000 and 2010. Source: The Summary of Agricultural Statistics, TURKSTAT, 2012.

The Ministry of Food, Agriculture and Livestock (MoFAL) was settled up in June 2011 following the abolishment of Ministry of Agriculture and Rural Affairs (MARA). MoFAL is the main institution responsible for making and implementing policy regarding livestock management, grazing land management and pasture rehabilitation.

In this study, it is aimed to reflect the policy approaches of the MoFAL on grassland management and pasture improvement through analysis of the planning documents by giving particular attention to climate change.

II – Policy approaches by planning

1. Rural Development Plan (2010-2013)

The Rural Development Plan (RDP) sets the priorities and policy framework for rural development in national basis. The measure “Rehabilitation and amelioration of pastures” is available under the strategic objective “Protection and Improvement of Rural Environment”. The interventions are: preparation of grazing plans, raising awareness of farmers on planned grazing, natural terracing, afforestation to provide resting places for animals, weed control, supports to farmers for protection of pastures.

2. IPARD Programme (2007-2013)

Instrument for Pre-accession Assistance Rural Development (IPARD) Programme has been prepared to use the funds of European Union (EU) allocated under the fifth component of Instrument for Pre-accession Assistance (IPA). The general objectives are identified as: to contribute to the sustainable modernisation of the agriculture and food sector with improvement of EU acquis related food safety, veterinary, phytosanitary, environmental standards and to promote the sustainable development of rural areas.The priorities related to pastures/grasslands have been included in the second phase of the Programme under the preparatory actions for the implementation of agri-environmental measures (Axis 2 interventions). The preparations for the conferral of management decision from EU to implement these measures under this priority has been ongoing and is expected to start by 2013.

The programme targets the three particular problems related with agricultural activities and the use of land one of which is related to grassland is soil erosion under the measure named “Erosion Control (Measure Code 201, Sub-measure 1).

Actions targeted under erosion control have been constituted under three interventions which are: conversion of arable land to permanent extensive pasture, reduction of grazing period on eroded pastures thus giving time to grass species to complete their biological cycle and to vegetation recovery, management of soil cover and enhancement of rotation on arable land by replacement of spring crops especially on slopes by winter crops.

3. Strategic Plan (2010-2014) and Performance Programmes

Strategic Plan (2010-2014) includes the mission, vision, main objectives and priorities as well as measurable indicators of the MoFAL. The performance programmes have been prepared in yearly bases and monitors the Strategic Plan. The strategic plan refers the measures regarding grassland management and climate change under the priority axes called “protection and sustainable use of environment and natural resources”.

The identified measures are: 1) protection and sustainable use of agricultural land including the activities: land evaluation studies, preparation of land use plans and consolidation of parcels, 2) development and extension of agri-environmental implementations; 3) improvement and sustainable use of pastures including the activities: formation of inventory for pastures, preparation of maps and identification of borders, raising awareness, rehabilitation of pastures, erosion control.

The measure regarding establishment of early warning system includes the monitoring of risks like drought and flood which are caused by the climate change. The measure implementation of agricultural insurance includes the support payments accounting 50 % of the insurance bills of farmers making agricultural insurance. The measure regarding providing of the losses of farmers due to natural disasters includes the payments made to farmers who suffer from the natural disasters to sustain their farming activity. The resources needed for implementation of these measures are seen in Table 1.

Table 1. The needed resources identified in Performance Programmes 2011 and 2012

Measure	Budget for 2011 (Million TL)	% in total	Budget for 2012 (Million TL)	% in total
Protection of agricultural land (Measure No 9)	0.2	0.002	321.5	3.06
Agri-environmental implementations (Measure No 13)	20.3	0.24	11.5	0.11
Improvement and sustainable use of pastures (Measure No 14)	21.9	0.26	23.6	0.22
Early warning system (Measure No 17)	0.14	0.016	50.5	0.48
Agricultural insurance (Measure No 18)	99.4	1.17	263.6	2.51
Natural Disasters (Measure No 19)	10.6	0.12	11.3	0.11
Total	152.5	1.8	682	6.5

Source: Performance Programmes 2011 and 2012.

The resources identified in Performance Programme 2011 account for 1.8% of total budget. The amount allocated for agricultural insurance is the major one which account for 1.17% of total budget. The needed resources identified in Performance Programme 2012 account for 6.5% of total budget showing significant increase of importance to climate change effects. The financing for protection of agricultural land and payments for agricultural insurance is comparably higher than the other measures.

III – Results and discussion

The policy framework in existing policy documents of the MoFAL refers mainly the structural problems of agriculture in the Country and targets generally the productivity, food quality and safety, modernisation of agriculture and food sector and integration to markets. The environment related priorities are particularly found in every policy document in which the grassland management is emphasised however the climate change policy implications have remained weak.

It is also observed in policy approaches that the grassland-based policy implications are strongly linked with the livestock management because of the livestock nutrition system which is based on grazing particularly on hilly and remote areas. This situation has been predominantly reflected in planning as the interventions directed to regulating the grazing intensity. Although the interaction between the environment and grassland management has been noted in planning, there has not been seen any evidence of obvious approaches for the establishment of policies for grassland in the context of impacts, mitigating and adapting to climate change.

Overgrazing causes destruction of the natural composition of the grassland and also decreases rangeland efficiency which is leading to erosion. The fact that pastures are faced with erosion problem more than other land which is about 64%, have resulted in policy implications to control the erosion problem which is particularly seen in IPARD Programme. Although it is not implied as a measure targeted to climate change, the measures regarding to erosion control in IPARD programme may be classified as the practices for mitigation purposes. Although the interventions under the erosion control are to be implemented at the pilot level, the implementation of this measure will be a great experience since the programme is an operational one with a budget allocated and institutional set up to be provided.

The RDP prepared in national basis includes the interventions for protection of pastures like preparation of grazing plans, raising awareness of farmers on planned grazing, natural terracing, afforestation to provide resting places for animals, weed control, supports to farmers for protec-

tion of pastures. There cannot be seen the relation between climate change and grassland management however, the interventions may be implied as for mitigation purposes.

The Strategic Plan and Performance Programmes may be considered as the most comprehensive and detailed policy documents regarding the grassland and climate change. There can be seen the measures for mitigation purposes and for decreasing the impacts of climate change (early warning system, natural disasters, agriculture insurance). The resources identified in Performance Programme 2012 account for 6.5% of total budget showing significant increase of importance to climate change when compared with the Performance Programme 2011.

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