

# The Role of Law and Institution for Sustainability of Pasture Resource

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## 1 Imperfect Enforcement of Land Ownership Regulation

Government pasture is the valuable land resource where livestock can graze. In order to meet the demand of animal products, government pasture must be conserved with care. But government pasture has been already destroyed intensively since a few decades ago. This destruction is led to by imperfect enforcement of land ownership regulation.

How is land ownership regulated in Turkey? It is controlled by cadastral registration system according to 'law of land'. Land is normally registered as either private ownership or government ownership on cadastral base. Private ownership of land is indemnified by the title deed which is called as 'tapu'. Before 1922, that is Ottoman empire days, land ownership was not clearly defined. Some parts were possessed by sultans, some were traditionally cultivated by peasants, and vast uncultivated land were used freely as common pasture by pastoralists. The need to register lands with 'tapu' were pressing for modernization of agriculture. In addition to traditionally cultivated land, newly reclaimed land also must be accompanied with 'tapu'. At the founding time of the state, huge uncultivated common pasture was taken by government. Due to immigration and population growth, this uncultivated government pasture was required to be converted to private cultivated land. Government authorized the farmer who had reclaimed a certain area of cropland from pasture by himself and hold on to the area for long

## 2 Pasture Attack

### :Unlawful intrusion of government pasture

You can find a sharp decrease of government pasture in area and increase of cropland and other use such as housing or industrial use (look at

enough years such as 20 years to take possession of the area. Both the traditionally cultivated land and the newly reclaimed land were obliged to be registered with 'tapu'.

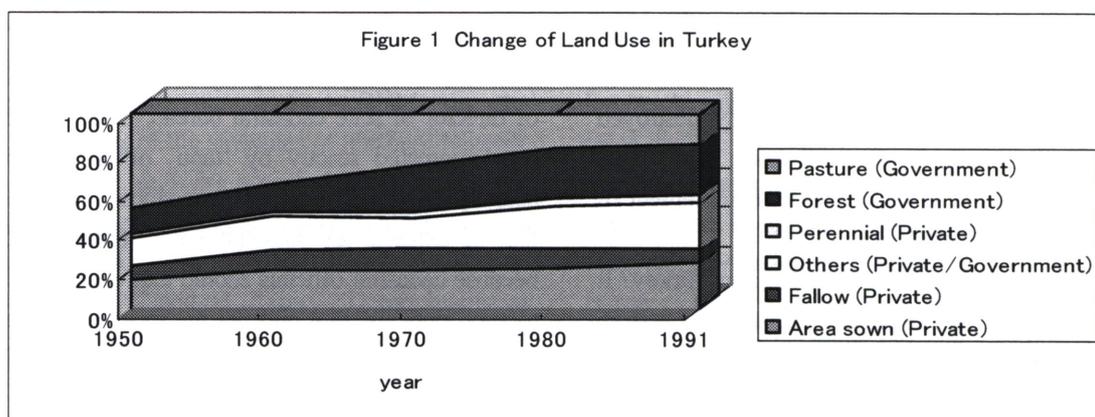
Cadastral office is in charge of issuing 'tapu' and indemnifying its property under the control of director of state cadastral bureau. Lands must be demarcated strictly by 'tapu' officials who actually came to check the ownerships. But quite lots of expense are inevitable for demarcation, because cadastral officials should expressly come to each persons' plot and get the exact evidence for his ownership. There were seldom formal written evidences left, so that it was often very difficult to prove his ownership. Because of these difficulties, only 70% of whole land of Turkey has been registered with 'tapu' until now. These difficulties of demarcation can be understood as extremely high *transaction cost for establishing private ownership*.

The other 30% is still unregistered with 'tapu'. A number of farmers who possess land without 'tapu' can also be observed in our field surveys of Adana and Konya. These unregistered cases are caused by high transaction cost and unregistered land is called as customary land ('zilyet'). Customary land involves severe problems encountered in disposal by sale, inheritance, and settlement of mortgage<sup>1)</sup>. In addition to these farm level problems, imperfect enforcement of the current land ownership regulations creates harsh problems concerned with government pasture conservation, that is (1) pasture attack and (2) overgrazing.

figure 1). On the other hand, it is noticed that government forest is conserved carefully under rigorous application of 'law of forest'. This decrease of pasture was caused by (1) lawful

conversion from government pasture to private cropland and (2)unlawful intrusion of government pasture for the use of private cropland, which is called as ‘pasture attack’, or ‘mera fecavozi’. The serious problem is second one, which is led to by insufficient enforcement of land ownership regulation. It is very difficult for government to

watch and monitor each unjust farmer who possesses government pasture adversely. This difficulties can be interpreted as extremely high *transaction cost for establishment of government ownership*. Because of this transaction cost, government land can be easily trespassed and ‘pasture attack’ was brought about.



Farmers are entitled to cultivate only their owned land with ‘tapu’ or farmer’s documents. Government pasture is authorized to be used only for common grazing. But it is said that unjust farmers had started to attack pastures or to intrude government pastures in 1950-60’s. It is because farmers became able to expand cultivated lands more by technological improvement such as switch from animal drafting to tractor power drafting. This unlawful intrusion was gradually stopping since 1980’s, because deterioration of government pasture was actualized explicitly, however, 30-40% of government pasture is already unlawfully intruded in Turkey. In addition, many cases of pasture attack found in field survey of Konya and Adana give evidences to high transaction cost for preventing intrusions.

In addition to decrease of government pasture in area, this unlawful intrusion induces overgrazing problems. Decrease of pasture makes pastoralists face shortage of volume of grass. They could not but start to bring animals to pasture much earlier than the optimum season. They begin to graze

animals just after snow has melted (around 15 Feb). But this date is too early for the grass to grow better. Once growing point of grass has been eaten by animals, grass loses the power to grow up well since then. This, what we call, ‘early grazing’ deteriorates the quality of grass and is closely bound up with overgrazing problems.

### 3 Overgrazing : Deterioration of grass quality

In addition to decrease in area, deterioration of quality of grass on government pasture become serious. According to the cases in Konya, plant cover of good quality grass was 75% before 1980, but now it reduces to only 25%. Animals are reluctant to eat bad quality grass, because of indigestibility. Especially speaking varieties of grass, 20% of bad quality grass is thorn plant (‘dikenli of’) which animals can not eat at all. Suitable grass on government pasture is not enough to keep animals as many as before. This intensive deterioration of government pasture began to actualize since about 25 years ago. Area

of good quality grass had decreased more rapidly last decades. This deterioration is considered to be caused by (1) overuse of government pasture, (2) decrease of precipitation, and (3) soil erosion. Especially overuse is the most vicious factor. Pastoralists or farmers have grazed too many animals without any idea of sustainability of pasture. We can call this overuse as overgrazing.

Overgrazing problems are also closely related to high transaction cost. Government pasture is the common property that any pastoralists can access nonexclusively. Prohibitive *transaction cost for exclusion*, such as construction of 'the Great-Wall' fence system to prevent trespassing, make exclusion impossible. Due to transaction cost, animals are grazed on the base of commonage. On that case, first, land will not be well maintained, because the person who engages in conserving activities can not always obtain the reward from that activities. Second, any pastoralists don't take notice of total damage to pasture (that is external diseconomy), which is brought about by superfluous increase of animals on pasture. It is because individuals will not bear the responsibility of the damage of common property. These opportunistic behaviors lead to overgrazing.

#### **4 Enactment of Law of Pasture**

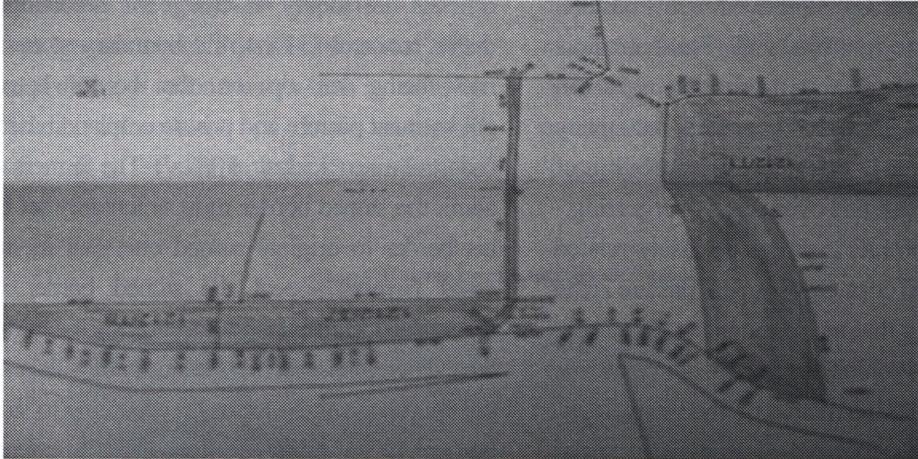
Pasture attack and overgrazing decreased both quantity and quality of government pasture, which were caused by imperfect enforcement of the current land ownership regulations. Inconsistence between the current regulations and conservation of pasture induced institutional change. That is enactment of 'law of pasture'(law no. 4342) which was enacted on February in 1998. The tasks of this law are as follows. (1) To delineate the border between private cropland and government pasture, (2) To confiscate the intruded government pasture area, (3) To implement the project for improving grass quality on pasture. Fertilizer and grass seeds are often subsidized to reduce deterioration, (4) To assign use right of demarcated government pasture to the authority of

village community.

Extension service workers and cadastral officials are jointly in charge of executing the duties concerned. First, the boundary stones are now being set up on the border between government pasture and private cropland based on cadastral map ('kadastral pafta'). The farmers who admit the stoned border must voluntarily set back his border to original stoned one. But in many cases farmers appeal the stoned border with dissatisfaction and continue to occupy the intruded area. Therefore, second, the heads of villages are obliged to check the intrusion according to stoned border. If he finds, he must report extension workers the location of doubtful area. Third, survey maps ('tecvav krokisi') of doubtful areas are drawn by actual survey by government. Picture 1 is one example of survey map where painted zones are intruded area. Forth, in the case where the factum of intrusion is proved, the lawless farmers are taken warning from the government. Unless he will set back the border in 4 years, he is supposed to be sentenced 2-3 months' imprisonment. Still, only 10% of unlawfully intruded area of government pasture has been taken by government. Actual survey of land and execution of sentences require tolerable cost. That can be understood as transaction cost. And the value of the area of government pasture that are still not confiscated can be interpreted as opportunity cost of transaction. Admitting that high transaction cost is imposed, government made decision to enforce law of pasture. The expected value of retrieved government pasture area is evaluated to be higher than those transaction costs nowadays. The value of government pasture conservation is conjectured to be enhanced in that extent.

But transaction cost, especially *cost for confiscation* could be prohibitive. Government taking of whole intruded area is extremely difficult. Alternative solution such as 'liability rules' should be presented when occasion demands. Availability of other solutions are

required to be examined in further studies.



Picture1 The Realities of 'Pasture Attack'

## 5 Concluding Remark : Induced institutional change

Even though sustainability of pasture resource can be affected by climate change, the decisive factor is conjectured to be human behavior. Human is intrinsically opportunistic, so that pastoralists will never take account of total damage to government pasture, which lead to overgrazing. If it is difficult for government to monitor individual lawless activities, farmers are willing to intrude government pasture. Those sustainability unfriendly opportunism is caused by high transaction cost.

Conservation of government pasture can not be realized until derived benefit over imposed transaction cost. Transaction cost remains still prohibitive, if pasture management is applied by only current land ownership regulations. But, once it is also applied by the law of pasture which regulates individual opportunism, transaction cost can be saved more. Then, conservation can be translated into reality. It can be stated that hurdle of the current regulation induces new institution, which can be called as *induced institutional*

*change*. Law of pasture still remains with problems of confiscation cost. Further institutional change will be induced in near future in order to reduce confiscation cost..

## NOTES

1) In order to cope with those cases, 'Farmer's Documents' ('ciftcilil belgesi') issued by head of village are authorized to be used as evidences for ownership instead of 'tapu'. This kind of ownership of that land is warranted by the committee of head and old men of the village ('ihtiyar heyeti'). As for sales, market of private land is established without any regulation. But as for inheritance, it is controlled by "Inheritance law" enacted in 2003. In order to protect scattering small plots, the minimum limit size of owned plot is regulated. 2,500USD /year is supposed to be the amount for subsistence per person. The size of plot where farmer can produce less than 2,500USD is prohibited to be inherited. That is around 20da.