

## COMPENSATION RATE VALUES OF FRUIT TREES DURING EXPROPRIATION: A COMPARATIVE STUDY

**Alda Taka**  
Faculty of Economy  
and Agribusiness  
**ALBANIA**

**Albana Jupe**  
Faculty of Economy  
and Agribusiness  
**ALBANIA**

**Erdona Demiraj**  
Faculty of  
Agriculture and  
Environment  
**ALBANIA**

**Bari Musabelliu**  
Faculty of Economy  
and Agribusiness  
**ALBANIA**

**Ana Kapaj**  
Faculty of Economy  
and Agribusiness  
**ALBANIA**

### ABSTRACT

A comparative study of the easements and compensation values of fruit trees in the cases of pipeline crossing has been undertaken for Albania, Greece, Turkey, Georgia, Azerbaijan and Armenia. The purpose of the study was to compare assessment methodologies for rate compensation values of fruit trees during construction and operation phases of pipelines. Investors in the case of pipeline construction demand land for purchase, rent, right of way or easement for tree planting restriction in the range of 8 m. In this study is discussed rate values of compensation fruit tree in Albania compared with other countries in the same situation: expropriation of land and scarification of fruit trees. Discussion of the methods and their calculation formulas show that there are differences in compensation quotes. Fruit tree compensation, the value differences were even greater due to the application of different methods. They were the lowest in Albania and Turkey compared to other countries. In Albania and Turkey as a missing profit is considered net profit and not income because in net profit are considered expenditures that are differentiated from the income that is not realized in the profit-making period. The difference in the value between the income and the net profit of a fruit tree production is large, sometimes half of the income. On the other hand, application of interest rate capitalization (3-5%) in all fruit trees is incorrect; this formula of calculation increases more than double the amount of compensation. Consideration of the concept "for eternity" is correct for fruit trees with long lengths of life such as olive and nuts. However, in all cases, the compensation and easement rates were in accordance with national legislation and met the basic principle of the property right use and the fair compensation of easements and fruit trees sacrificed by the works.

**Keywords:** Easement rates, private investments in construction, expropriation.

### INTRODUCTION

A public or private investment in construction requires surface, subsurface or area space. In addition to land, immovable property, forests and meadows, fruit trees are affected by these constructions. It is very important that the owners of the lost fruit trees and orchards receive a fair value, timely and transparent value. Generally, the legal basis of compensation in case of expropriation follows the principles of universal human rights and their respective constitutions (UN, 1948; EU, 2000). Laws and regulations for expropriations are consistent with the performance required by international financial institutions (Schmid U.Ch. and Herte Ch., 2005; IFC, 2012; EBRD, 2008) but the values are different depending on the type of fruit trees, climatic regions, market and farmers income.

The Civil code of Republic of Albania affirms on the expropriations that “*the ownership rights cannot be removed to nobody, except when this is requested by the public interest, and always toward a right compensation*” (CCRA, 1994). The expropriation and the expropriation procedures are regulated in a detailed way by the Law no. 8561, date 22.12.1999 “On the Expropriations and Taking in Temporary Use the Private Property for Public Interest”, compliance of this provision. The Council of Ministers is the structure that approves the expropriations of private property, based on the requests presented by the state subject or the private legal entities that undertake the realization of public works (LAW No. 8561, 1999). The duty of Council of Ministers should be not only the connotation of the existence of public interest, but also the examination of alternative possibilities for their realization.

The compensation of loss fruit trees is based on the replacement value equal to Net Present Value (NPV), a concept that present value of positive payments minus the present value of negative payments made at different points in time. All the future values of income and expenditures provided by fruit production for a limited time or for all life, depending on the type of vegetation and assessed with market value are taken to the present. The yield of fruit trees depends on climatic conditions such as temperature among which: average, maximum, minimum, sunning; (iii) hydrological variables such as runoff, soil evaporation, plant transpiration, plant interception, percolation, infiltration, irrigation water requirements, water stress and soil water (ii) soil conditions such as content of macro elements, content. The yield varies on age for example if the age of apple trees is over 30 years old the annual apple production amount obviously fell down (Topcu et al., 2010). Based on the special cultural and natural values, that represent, some fruit trees such as olive and nuts, centuries-old have been proclaimed natural monuments. They do not deteriorate, but they are replanted, in a state that is, after lengthy and caring procedures, served as compensation values (OFRIDE, 2014).

The purpose of this article is to find gaps in the fruit trees compensation values used in Albania through a comparative study with other Trans Adriatic Pipeline (TAP) host countries such as Greece, Azerbaijan, Georgia and Armenia.

## METHODOLOGY

The methodology used in this study consists on comparative approach of the values and used for compensation of the fruit trees sacrificed in the pipeline construction belt in case of TAP in Albania and compensation values used in other countries in the region for the same project. In all cases the analysis is based on the Land and Easement Acquisition Livelihood Restoration Framework - TAP Albania (TAP, 2014), Livelihood Restoration Framework - TAP Greece (TAP, 2014), Resettlement Action Plan (RAP) for Above Ground Installations (TANAP, 2014) Turkey, Guide to Land Acquisition and Compensation SCP Azerbaijan (SCP, 2015), Guide to Land Acquisition and Compensation SCP Georgia (2014), and Land Access and Livelihood Restoration Plan - AGI Armenia (Giovanneto F., 2015).

The differences in the rules and the calculation formulas for the compensation of fruit trees are evidenced for each of the countries compared. To set the compensation values on a comparative basis, the cultures that are compared below are the same and the assessment is not made on the

absolute values but in the manner and formulas used for compensation. As a case study we are based on expropriation during the construction of the pipeline (TAP, BP).

In Albania the methodology used to calculate compensation values for Perennial Crops was detailed in Instruction of Ministry of Agricultural and Rural Development, dated Oct. 5, 2000 on “Technical criteria for calculating the value of fruit trees to be expropriated for the public interest, when declared indicators of transactions are missing”.

The formula used to calculate compensation values was as follows:

*Full Replacement Cost = Annual Net Profit + Replanting Costs + Maintenance Costs during Re-establishment + Missing Profit (a function of the age of the affected tree and therefore the number of years of missed profit until a new tree attains the same level of production as the lost tree) + Transaction Costs*, where:

Annual Net Profit= Income – Expenditure, where Income is a function of the “Yield” multiplied by the “Market Price” for the specific crop.

Values for “Yield”, “Market Price”, and “Expenditure” for perennial crops were obtained through consultations with experts at the Regional Agricultural Directorates (RADs); reference to annual publications published by the Min. of Agriculture (Annual Statistical Book, Technical Criteria for the Introduction of Fruit Trees, Technical Papers, etc.); and as validated by feedback from PAPs and other local experts during the Consultation/Disclosure process.

The following coefficients/components were then applied to the base calculation:

*Replanting Costs* reflect the expense involved in having to replace and replant a tree lost to the project. The Replanting Costs were provided by the RADs, and vary depending on the type of tree and the optimal spacing assumptions determined by the RADs.

*The Maintenance Cost Coefficient* reflects costs associated with maintaining trees once they have been planted. These costs were provided by the RADs, and they varied depending on the variety of the tree. The value of the coefficient varied between 0.60 and 1.00, and were applied as follows:

First year after Planting:	0.60
Second Year after Planting:	0.80
Third Year after Planting:	0.90
Three Years + after Planting:	1.00

*Missing Profit (Accumulated Lost Production)* reflects the profits lost to the farmer during the time it takes for a newly planted tree to attain the same productivity as the tree that was cut-down.

The amount of the “Missing Profit” depends on the variety and age of the specific tree – which determines the yield - when it was cut down. Each affected tree was classified into 1 of 5 age categories, and the length of time of each category depended on the specific variety of tree:

*Category 1:* Seedling or Nursery Tree

*Category 2:* Young, Non-productive

*Category 3:* Young Productive (Producing at a reduced yield compared to maximum production)

*Category 4:* Mature (Full production)

*Category 5: Aged (Yields start to decline)*

Transaction Costs were not part of the official methodology described in the relevant DCMs for calculating values for crops (annual and perennial), but to the extent they were incurred for whatever reason, they were added by TAP to ensure compliance with the requirements of the EBRD/IFC/EIB. TAP developed a comprehensive list of such potential Transaction Costs. Transaction Costs were determined on a case-by-case basis (see above).

**RESULTS**

In Albania, as in all the countries analyzed in this study, the law on expropriation is accompanied by the legal package for detailed procedures for the expropriations during the construction of public works and strategic works such as power lines. In all countries under this study, Constitutions and laws protect property rights and state that compensation values for purchased, used, serviced, and rented properties, annual and perennial crops must be in line with the best international standards. In general, and in most cases of property purchase and/or compensation, the used way was the negotiation and only in some cases the compulsory expropriation of the property. The land acquisition value, the easement and compensation values for fruit trees were different due to the legislation on compensation, the character of the gas pipelines (especially their diameter), the land taken in use, the negotiations conducted between the representatives of the government and pipeline Construction Company, the regions where it is built and other social and economic factors.

In the table below are given cases of easement for right of way values (in percent of agricultural land value) and the compensation value for horticulture trees affected by the pipeline (TAP, TANAP and BP) in Albania, Greece, Azerbaijan, Armenia, Georgia and Turkey.

The data in the table below shows that the compensation of fruit trees sacrificed by the pipeline construction is based on the income or net profit that provides a crop from the annual value estimated in the market. Fair compensation is based on the owner's right to consistently ensure the same amount of income as if the tree or orchard were to produce each year throughout its life (economic).

The surface affected by the construction of gas pipelines is almost the same in all cases: 36-38 m in length along the pipeline. In Albania, the loss land compensation was based on indirect method of using as capitalization rate the bank interest. Almost the same methodology is used in Georgia with the change that as capitalization rate is used the annual rent and not the net profit. The agricultural land price methodology in Albania and Georgia is indirect, deformed and incorrect in the conditions of the market economy and that is due to the lack of agricultural land transactions. After 2013 (for Albania) and 2010 (for Georgia), direct methods for land valuation are used, as in all other countries in the study: the average value of land close to the land that will be assessed or of approximately the same fertility.

Because of the different methods used, the value differences of agricultural lands in Albania compared to Greece and Turkey are higher; they are twice as high in the plains and up to four times higher in the hilly and mountainous areas compared to the two countries mentioned above.

Estimated land prices in Georgia are considerably higher than in other countries, excluding Albania. Nowadays, where the used method is based on the average land value of executed transactions, the price of agricultural land in Albania is almost the same as in the countries quoted in this study.

Legislation package used for full compensation value for fruit trees in other countries was, as in Albania, complete and described in the Guidelines of the Ministries of Agriculture (Azerbaijan), in EU level regulations (Greece) or in Laws on Expropriation (Turkey, Armenia and Georgia). The formulations used were differentiated as follows:

In Albania and Turkey, for the estimation of fruit yields, "Net Profit" is used as the difference between annual revenues and expenditures while in the other four countries it is used income instead of net profit.

The years of missing the net profit / income usually range from 3 to 5, with the exception of Azerbaijan where the missing income is supposed up to 7 years, according to the guide, the period for entry into the production of fruit trees

For two countries Albania and Turkey the compensation formula includes: Net Profit for three years, replanting cost, maintenance cost and three years profit missing. In Georgia, Azerbaijan and Armenia in the formula are included in the same elements but with the change that instead of net profit uses income. In Greece, capitalized income is used where the capitalization rate is that applied as the norm of interest in agriculture without time limitation but "for eternity".

Table 1. Summary of Entitlement compensation of Fruit trees applied in Albania and their comparison with other countries

Entitlements	Albania (TAP)	Greece (TAP)	Azerbaijan (TAP & Others)	Armenia (SCP)	Georgia (extension of existing pipeline) (BP)	Turkey (TANAP)
Compensation for Restriction use (8 m along gas pipeline) Agricultural soil price (Methodology)	According the capitalization rate (5% for 2014)	Market mean value of land of the same category in proximity of the affected land (price of transactions realized the last year)	Market mean value of land of the same category in proximity of the affected land (price of transactions realized the last year)	Market mean value of land of the same category in proximity of the affected land (price of transactions realized the last year)	According to rent capitalization method. The method is based on calculation of the rent for surface unit for a year and the land value is based on this.	Market mean value of land of the same category in proximity of the affected land (price of transactions realized the last year)
Legislation package used (Law/Rules/Guide) for compensation of fruit trees	Guide of Ministry of Agriculture and Rural Development (Guide no. 1: 2000)	Rules of Ministry of Agriculture (adaption of EU rules for compensation)	Guide (Hasanov Z., and Aliyev J., 2011)	Law "On expropriation"	Law "On expropriation"	Law nr. 2492 "On expropriation"
Loss of fruit trees formulas	$V = (\text{Net profit} \times \text{years}) + \text{replanting cost} + \text{maintenance costs (3 years)} + \text{profit missing (3-5 years)}$	$V = )$ $i = \text{Capitalization rate (5\%)}$ $n = \text{years number of production trees (economically)}$	$V = (\text{Income} \times \text{years}) + \text{replanting cost} + \text{maintenance costs (maturity age} + 2 \text{ years)} + \text{missing profit (3-7 years)}$	$V = (\text{income} \times \text{years}) + \text{replanting cost} + \text{maintenance (2-5 years)}$	$V = (\text{Income} \times \text{years}) + \text{replanting cost} + \text{maintenance costs (maturity age} + 2 \text{ years)} + \text{profit missing (3 years)}$	$V = (\text{Net profit} \times \text{years}) + \text{replanting cost} + \text{maintenance costs (3 years)} + \text{profit missing (3-5 years)}$
Compensation based on net profit missing	Net Profit	Income	Income	Income	Income	Net Profit
Years of Compensation of income.net profit missing	Yes (3-5 years)	Yes (years needed up to production trees economically)	Yes (3-7 years)	Yes (2-5 years)	Yes (5 years)	Yes (3-5 years)
Compensation of fruit trees "for eternity"	No culture	YES (all cultures)	Only nut	Only nut	No culture	No culture

## DISCUSSION

Fruit trees, unlike annual plants, have specifics that should be considered when calculating the compensation value. They are many years old and in some cases have produced for hundreds of years, far more than a few human generations (olive, nuts). When a fruit tree is sacrificed, for example, in the belt area of a pipeline construction that ranges from 30 to 40 m in width, the replacement value includes new planting costs, maintenance costs, and support structure costs. It should be also compensated the missed profit which is calculated for the period the trees need to start to produce. The missing profit is expressed as the difference between the income earned by the retail sales of the production and the expenditures. The time from planting to the age of production is dependent on fruit tree biology. In Albania, this period is determined in the Guidelines of the Ministry of Agriculture (Technical criteria for the introduction of fruit trees, guide, 2000).

In all countries discussed here, a ministerial guide (Turkey, Greece) or another legal reference such as DCM or a University reference (Azerbaijan) for the timing of production and maturity of fruit trees, has been used. Compared to the application of substitution values in Albania, in the other countries we have the following changes:

With exception of Greece, in all other countries, the calculation formula is based on loss net profit, replanting costs, support infrastructure, and maintenance costs. In Greece, the calculation is based on the principle that the production of fruit trees is for eternity and the capitalization rate is 5%. The application of the principle of production "for eternity" increases the value of the compensation of fruit trees.

The use of net profit for the compensation of the missing profit expressed as "net profit loss" is applied only in Albania and Turkey, while in other countries the profit is "wrongly" equalled to income. As an economic term, "net profit" is defined as the difference between income and expense for a type of fruit culture on a certain property. However, in the absence of trees (as a result of their sacrifice in the 30 m belt, where land is rented only during construction), expenditures are not done. So, in accordance with the term definition, the difference between income and expenditure is, in the legal context, "compliant".

When calculating the years of profit-missing in Albania (TAP), time period from planting to production is considered, while in other countries two years are added to this period, which pertains to the time of gas pipeline construction.

Formula mentioned above is correct up to our opinion, using up-to-date values for the variables in the formula, according to estimations done by stakeholders in Albania, and added any transaction costs, resulted in compensation values for perennial crops that are FRC-compliant.

According to the methodology used for fruit trees in case of uprooting, the compensation value has been done (replanting + Maintenance cost + profit missing) up to the age of maturity into production (correctly according to the guidelines of biology trees) while, the fruit tree would uprooting at the age of  $N$  years. Meanwhile the difference between the age of the fruit tree is compensated ( $2$  years +  $m$  years that the tree fazes from the replanted to maturity).

This difference can be expressed as follows:

$N$  (age at pickup moment) +2 (years for construction) +  $C$  (age age of production – maturity)> or >>  $1 + C$  (age of production-maturity)

This difference causing profit loss is not considered in the methodology according to the Ministry of Agriculture Guidelines (2000).

Furthermore nuts compensation value were calculated based on the concept “for eternity” due to the long life in Armenia, Azerbaijan Georgia but not applied for Albania and Turkey. In Greece, the values are accounted for all plants according to the concept of "for eternity", meaning rural capitalization of the bank rate (3-5%). We think that this kind of applied formula is correct for olives and nuts trees, on the other trees should not be applied.

## CONCLUSIONS

Compensation values of fruit trees are different between countries considered in this study. They are most favourable in Greece, Armenia, Azerbaijan, Georgia and the lowest in Albania and Turkey. In Albania, the low compensation values for fruit trees come from the disadvantageous negotiations of the Albanian authorities with the Investor, which is mostly due to the limited experience in these types of investments and the thirst for foreign investments. The difference of rate compensation values comes from the different conceptions of the elements of the calculation formula used for compensation values. More explicit, in Albania and Turkey the missing profit is considered net profit and not income. Net profit considers expenditures that are differentiated from the income which is not realized in the loss profit period. The difference in the value between the income and the net profit of a fruit tree production is large, sometimes half of the income.

For more, application of interest rate capitalization (3-5%) in all fruit trees is incorrect; this formula of calculation increases more than double the amount of compensation. Consideration of the concept "for eternity" is correct for fruit trees with long lengths of life such as olive and nuts.

However, a fair compensation has been applied in both cases of compensation in Albania, according to Albanian legislation and best international practices. During TAP construction there has been no violation of the right of property in Albania, and a fair compensation in case of purchase and easement has been done.

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