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CONTRIBUTION OF FORESTRY TO WELLBEING OF MOUNTAIN FOREST DEPENDENT COMMUNITIES' IN THE UKRAINIAN CARPATHIANS

In the paper the role of forests and forests products in well-being of mountains forest dependent communities' in the Ukrainian Carpathians studied and analyzed. It is analyzed how ease for local communities is to get legal access to obtaining forest products including wood and non-timber forest products, hunting and grazing rights. Socio-economic and environmental well-being of the communities in study region analyzed. In-depth study was held with such categories of respondents: as wood business representatives, forestry specialists, and local community representatives. The main threats causing well-being decreasing in mountain communities (including illegal logging) studied. The results of the study show that in a broad sense, economic, environmental, social, cultural and aesthetic functions of forests contribute considerably to the well-being of forest-dependent communities' in the Ukrainian Carpathians. It is concluded the innovative sustainable forest management (SFM) practices, community-based management strategies, smart development of forest-dependent mountain territories and communities could contribute considerably to increasing of human well-being, strengthening community resilience without destroying fragile mountain ecological sustainability.

Key words: forest ecosystem services, forest dependent communities, components of well-being, illegal logging, legal access to forest products, SFM

Introduction. Forests provide a broad array of essential services across all scales, from local communities to the world. The mountain forests are important source for economic and social development (wood and non-wood products, renewable energy resource, and recreation) and ecological significance (watershed protection, erosion control, biodiversity conservation), which is taking first priority now.

The mountains run northwest to southeast through western Ukraine, a region with over 40% forest cover that accounts for 20% of total forested area in the country [16].

Forests dominate the landscapes of the four oblasts that make up the Ukraine's Carpathian Mountains (Lviv, Ivano-Frankivsk, Chernivtsi, and Zakarpattia (Transcarpathia)). The Carpathians, covering only 4% of the country's territory, produce a third of the forest resources of Ukraine and occupy 53.5% of this region. The location of the Carpathian mountain forests has global environmental significance for the densely populated and highly urbanized landscapes. The biodiversity of the Carpathians is unique, rich, and threatened [19]. Forest land users in the Ukrainian Carpathians are: state forest enterprises; local communities; nature protected areas, tourism enterprises, agricultural enterprises, etc.

Forests contribute to reducing the vulnerability of society to climate change and also ensuring wellbeing of local forest dependent communities.

Material and methods. The data which were collected within projects in the framework of the ENPI FLEG program "Improving Forest Law Enforcement and Governance in the European Neighbourhood Policy East Countries and Russia" analyzed selectively for the Carpathian region. In general the studies have been made for administrative regions of Polissya and Carpathians. Field research has been made in four administrative districts (pilot territories) within above mentioned regions, which are known by high forest cover and significant role of forestry in regional economy development: Staryi Sambir District in Lviv Region; Kosiv District in Ivano-Frankivsk Region; Khust District in Zakarpattia Region; and Bererzne District in Rivne Region [5].

In this paper in-depth study was held with forest-dependent communities in mountain region of the Ukrainian Carpathians (Staryi Sambir District). There are three categories of respondents: i) business representatives; ii) forestry specialists; iii) local community representatives.

Criterion for selection of respondents: sufficient level of competence in the problems of research, which has been evaluated by following parameters: i) work on positions requiring special training and managing positions in state and private structures (forestry specialists and business representatives); ii) residence and work on the territories of local communities (district capitals, towns,

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villages) in the regions where the research has been made; social activity. Participants were selected in one of methods: identified by the researcher or identified by an interviewee (snowball sampling).

Methodology of study based on 'face-to-face' questionnaire survey of respondents by employment place (business representatives and forestry specialists); by employment or residence place (community representatives) [5].

The data processed with the Statistical Package for the Social Sciences (SPSS).

Results and discussion. Well-being and forest-dependent communities. Well-being is a term used for the describing general condition of an individual or group, for example their social, economic, ecological, psychological, spiritual or medical state. High well-being means that, in some sense, the individual or group's experience is positive. The concept of "community well-being" is one of the frameworks for community state assessment along with other concepts such as local community quality-of-life, community health, community resilience or community capacity.

Human well-being and progress toward sustainable development are vitally dependent upon Earth's ecosystems. In the 2003 Millennium Ecosystem Assessment [15], well-being includes basic material needs for a good life, the experience of freedom, health, personal security, and good social relations. Together, these provide the conditions for physical, social, psychological, and spiritual fulfilment. The Millennium Ecosystem Assessment (2003) [15] defines ecosystem services as the benefits people obtain from ecosystems. Three types of services directly contribute to human well-being: provisioning services (also called ecosystem goods), such as food and fuel; regulating services, such as regulation of water, climate, or erosion; and cultural services, such as recreational, spiritual, or religious services. In addition to these, supporting services represent a fourth type of service and include the services that are necessary for the production of other services, such as primary production, nutrient cycling, and soil formation. Forest ecosystem services contribute to reducing the vulnerability of society beyond the forests. Forest regulating services reduce the exposure of the society to climate-related extreme events: they can moderate the force of waves or wind and reduce temperatures during heat waves. Forest provisioning services can also provide safety nets to local populations, reducing their sensitivity to climate change.

Forests provide a wide range of natural assets, including household goods, cultural values, physical and biological products, and other services that are vital to the livelihood and well-being of many people [17].

According to Kusel [13] forest-dependent communities are "those immediately adjacent to forestland or those with a high economic dependence on forest-based industries, including tourism as well as timber".

Well-being in forest-dependent communities has long been discussed in the context of community sustainability, a term that includes the more general

notion of forest community well-being. This includes not only economic indicators (i.e., per capita income, employment) but environmental quality and socio-cultural indicators that characterize community well-being. The level of education, parenting, recreation and leisure, social relationships between members of the community and intangibles such as the spiritual level of development affect the well-being of the community.

The results of the study show that in a broad sense, economic, environmental, social, cultural and aesthetic functions of forests contribute considerably to the well-being of forest-dependent communities' in the Ukrainian Carpathians (Fig. 1).

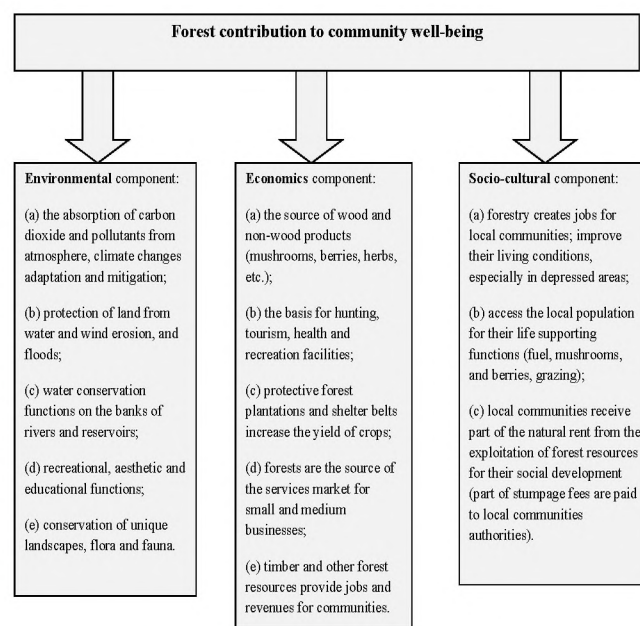


Fig. 1. Environmental, economics and socio-cultural components of forest contribution to community well-being

The analysis highlighted the environmental and spiritual aspects of well-being. Although it identified those communities have a number of drawbacks including: low incomes, poor level of entrepreneurship in rural areas, low employment, illegal labor migration and a natural decline in population.

Socio-economic and environmental well-being of the communities in study region. Stryi Sambir district (population 78.331) of Lviv Region is characterized by high forest cover (46.1%) and relatively high volume of products and services based on forest economy development. It was the main criteria for choose this territory for this specific survey. The district takes an extremely advantageous geographical location as "gateway" to the Ukrainian Carpathians, and territory which is bordering the European Union (Poland). Forestry in this area provides broad range of forest functions, wood and no-wood products, jobs in state forest enterprises and small wood-processing enterprises. Touristic industry is growing but still it is not well developed. At the same time the market for multiple ecosystem services is not developed enough as well [20].

There is a socioeconomic inequality between rural and urban areas. The socioeconomic situation of mountain areas and valleys/lowlands is slightly different (in the Ukrainian Carpathians 59%-91% of the population lives in rural areas [4]. In Staryi Sambir district the share of rural population is 81% [20].

The rural population depends very much on ecosystem services, especially those people not directly living near the main roads. After independence in 1991, the few industrial structures established in Soviet times closed down and since then poverty and unemployment have prevailed in the area [23]. The living standard is lower than in cities.

Many social, environmental and economic problems exist in the region: high rate of unemployment, migration of population, and weakening of rural communities. Economic problems include the loss of job opportunities, the loss of value-added manufacturing, illegal logging, export of raw material, and depopulation of rural areas [6]. A great part of the rural population seeks seasonal and even permanent works abroad [4, 8]. The additional money earned in foreign currencies increases their spending power. This detaches families from direct dependence of biodiversity and ecosystem services. For instance, families abandon subsistence farming as they can afford to buy their supplies and have no time for farming because of their work.

Other problem is land acquisition and non-regulated development of recreational areas [6].

Subsistence farming is the most important response to unemployment and poverty. Agricultural activities are mainly for self-supply and almost entirely self-sufficient [12]. Cows, sheep and cattle products such as milk, cheese, meat and wool are used for self-supply or are sold locally.

Traditional agriculture and livestock remain the basic sources of food for local rural communities. Most families have a garden and domestic animals like cows, goats, pigs and chicken. The fodder is grown in the garden and hay is mown on meadows adjacent to the house or higher up in the mountains. Agricultural activities are comparatively basic without the use of high-tech equipment, fertilizers or pesticides.

People are therefore very much dependent upon supporting ecosystem services like soil formation and nutrient cycling or regulating services like pollination and water regulation.

Water resources as a key factor for development and human well-being – for agriculture, fishery, industry, power generation, and tourism and human consumption – are plentiful due to the region's favourable climatic and hydro-geological conditions [23].

Most houses have electricity supply but water is taken from nearby wells and rivers [8]. Over 80% of human water consumption in Carpathians is supplied by groundwater [3]. Water supply is steady, but water is drawn mainly from regional groundwater sources and water bodies. Sources of energy supply are gas and electricity.

Most villages have no sewage system [4]. Village dwellers have dry toilets and wastewater is disposed off via drainages and water courses.

Wood is the major fuel for heating and cooking. Firewood is provided by local forestry and wood processing enterprises or collected illegally. Wood is also used as construction timber and for traditional handicrafts, which are also sold for additional income. Forestry and wood processing enterprises are the main local sources of income and employment [8], and in some areas small sawmills and wood processing industries have a more social than economic character in preventing local unemployment [23].

Also non-timber forest products like mushrooms, berries and game, as well as medicinal herbs collected in the surroundings, are additional vital resources for self-supply and additional income when sold.

Forests are the basic and emergency source of resources and income, especially for the very poor or during hard times. A growing source of additional income is the provision of tourism and recreational services like guest rooms, transport services to remote areas for skiing and hiking or horse riding [8]. The Ukrainian Carpathians offer rich natural and cultural heritage that is the foundation of tourism development in the area. The cultural heritage is closely tied to the natural environment – to certain landscapes, species or natural processes. Similar to more rural areas, also in towns, forestry and tourism play a relatively significant role as part of the local economy and source of employment depending very much on forest resources and accessibility as well as cultural ecosystem services of the region such as aesthetic, recreational or educational services. Tourism is on its way to becoming an important sector in the region (Fig. 2).

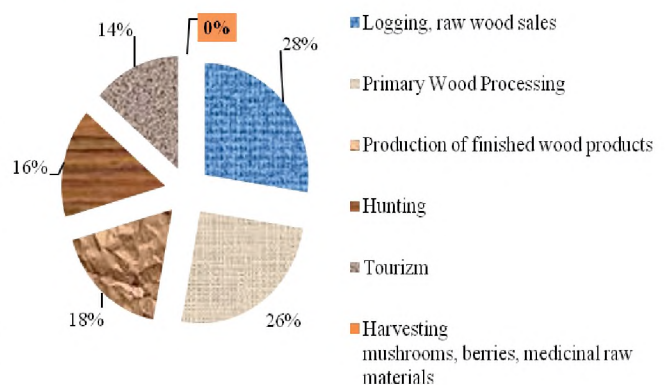


Fig. 2. Forests' related activities in the study region

The well-being of rural local communities in mountain regions depends directly from sustainable development of forestry.

What forests mean for the local community? Local communities are dependent on local forest resources for a variety of needs, such as fuel wood, timber and other wood products, food, household uses, and recreation. The forest also contributes for many community members' sense of identity.

Forests are essential for human survival and well-being. They harbor two-thirds of all terrestrial animal and plant species and provide food, oxygen, shelter, recreation, and spiritual sustenance, as well as over five

thousand commercially traded products, ranging from pharmaceuticals to timber and clothing [18]. The role of Ukrainian forests is very important for ecosystem services delivering, in particular soil protection, water regimes regulation, creating more favourable microclimate conditions for agriculture (especially in the south region), recreation, and cultural heritage conservation.

The large tracts of forests play a great role in carbon sequestration and in the hydrological system. Those ecosystem services are globally relevant and exported, although not marketed. The import of environmental costs plays a greater role than their export. Tourism and recreation development including marketed recreational services is a growing economic branch.

Community members reported that forest is very important for their as a natural phenomenon or protected area (69.4% of respondents), area for gathering non-timber forest products (NTFPs) such as mushrooms, berries, medicinal plants, etc. (41.7% of respondents), recreation area (32.6% of respondents), source for commercial timber and firewood (29.4% and 18.0% of respondents). More than two-thirds of the respondents said that it is very important to protect forests and survey results confirmed the hypothesis about the importance the role of forest resources and forest ecosystem services for forest dependents communities (Fig. 3).

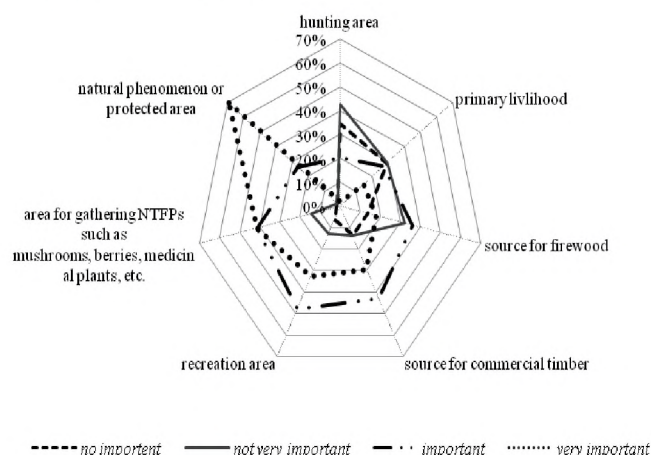


Fig. 3. Meanings that forest represents for local community

Very important forest role for forest-dependent community well-being as natural phenomenon or protected area (69.4% of respondents), area for collecting NTFPs – mushrooms, berries, medicinal plants, etc. (41.7%), recreation area (32.6%), source for commercial timber harvesting (29.4%), firewood (18%), primary livelihood (14.6%) and hunting area (only 2% of respondents).

Forestry and tourism as the major and developing economic sectors and main sources of employment and additional income are directly based upon ecosystem services such as wood or recreational resources. The status of those resources has a great impact on the development of those economic sectors and therefore on socio-economic stability.

State of forest in mountain region. The current ecological state of forests is conditioned by the level and intensity of anthropogenic influence as well as by the growing urban and industrial pollution load, which impair the natural stability and environment formative functions of forest ecosystems. In some areas the anthropogenic pressure on forests has caused significant ecosystem instability. During the last few decades the number of fires and burned area increased. The devastating floods caused severe damages, and the social and economic problems in a remote mountainous region of Ukraine.

There is minimal monitoring and enforcement by the local authorities to ensure that forestry enterprises comply with environmental regulations [22].

As our survey shows the communities' representatives are more critical concerning the state of forests in the region than forestry specialists or representatives of wood processing business representatives (Fig. 4).

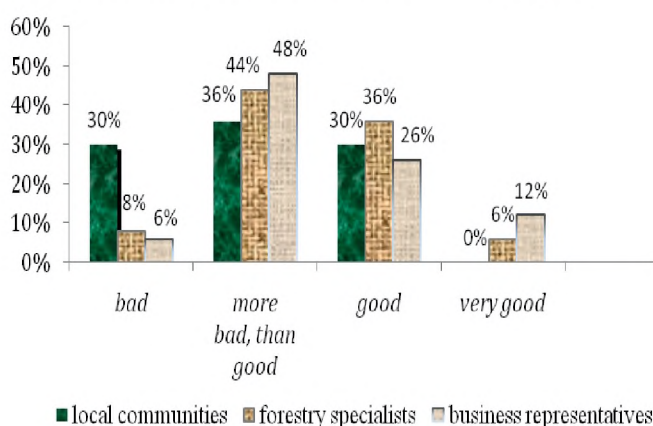


Fig. 4. Stakeholders perception of the state of forests in the region of the Ukrainian Carpathians

The main threats that decreasing well-being in mountain communities. It is needed to ensure the economic and social well-being challenges of mountain communities are being increasingly recognized. However, this awareness is not progressing at a significantly rapid pace to prevent the degradation of mountainous territories around the world. Sustainable rural development in mountain regions is often directly related to unsustainable forest practices and overexploitation of forest resources [19].

The challenges to the sustainable development in Ukraine's Carpathian Mountains include low incomes, unemployment and job loss, limited educational possibilities, depopulation of rural areas, inadequate funds for SFM and illegal logging [2]. These factors consequently decrease forest productivity, which, in turn, compromises watershed functions and the stability of fragile ecosystems. Other important problems include pollution, unsanctioned land acquisition and unregulated development of recreational areas by outside business concerns which ignore local cultural traditions, including traditional landscape planning and land use systems.

According to respondents – local communities – highest threats to forest conditions are (Fig. 5):

corruption schemes and illegal timber harvesting (46%) and ineffective and unsustainable exploitation of forest resources because of decisions of local business (36.7% of respondents), and imperfect legislative base (30.6%).

A higher threat to the forest condition is unsustainable activities of forest enterprises (49%), ineffective and unsustainable exploitation of forest resources because of decisions of local authorities (45.1%), illegal logging by local residents and poor protection of the forests (48% each point). Also higher threats to the forest condition, according to local communities, are ineffective and unsustainable exploitation of forest resources because of decisions of local business, poor environmental ethics of local respondents (41.2%), transfer of forest lands for lease by so-called temporary forest users (40.8%) and corruption schemes and illegal timber harvesting (40%). Low threat is visiting tourists and their impact on the forest (40%).

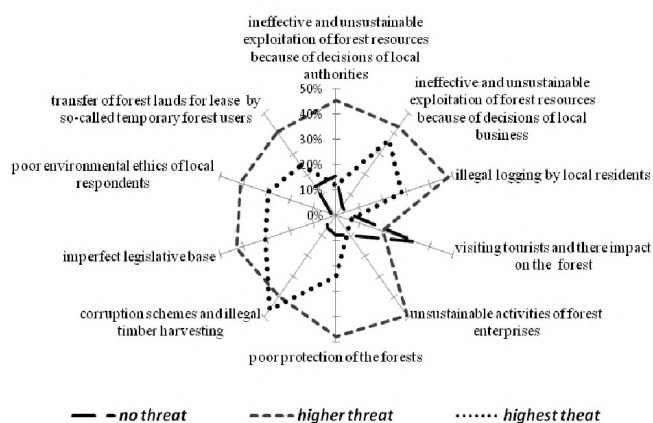


Fig. 5. Key factors that influence law violations in forestry sector

While analyzing the threats for the forests from various factors, respondents tend to 'shift the responsibility' on 'objective situation in the country' and put the factors which are beyond their direct control: shadow economy, corruption, insufficient level of social care and poor economic situation of local population etc. on the first places as main threats [5].

Illegal loggings as a main threat to decreasing well-being. Kuemmerle et al. (2009) [12] found that unsustainable forest use and illegal logging are persisting, resulting in continued loss of older forests and their services as well as in the ongoing fragmentation of some of Europe's last large mountain forests.

Illegal logging and low attention to the interests of the local communities' identified as key unsustainable forestry practices in the study region (Fig. 6).

According to survey local forest depend communities underlain next causes of illegal logging: low level of social standards of population, high unemployment rate; functioning of illegal private sawmills, high profitability of illegal logging; insufficient measures to combat smuggling and corruption, presence of the shadow sector in the economy.

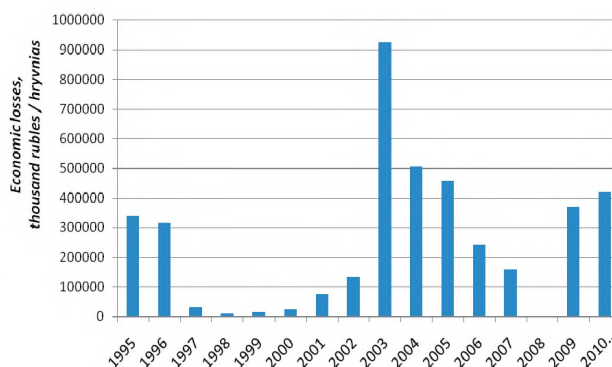


Fig. 6. Economic losses caused by illegal logging in forests managed by "Staryi Sambir FME"

According to a survey of local communities, forestry professionals and business representatives the main factor that belong to unsustainable forest management and adversely affects the economic and social development of forest areas are precisely the illegal logging.

Thus the respondents consider as the underlying causes of illegal logging such as:

- I. low level of social standards of population, high unemployment rate;
- II. functioning of illegal private sawmills, who are consumers of timber of with illegal origin,
- III. high profitability of illegal logging;
- IV. insufficient measures to combat smuggling and corruption,
- V. and presence of the shadow sector in the economy.

Often small local sawmills and wood processing industries have a more social than economic character, preventing local unemployment, providing people with firewood for very low prices [23], but many of them are illegal.

The illegal logging causes a number of socio-economic consequences:

- I). deterioration of living standards due to depletion of natural resources (reduction of the level of economic and social wellbeing of forest dependent communities);
- II). social conflicts over resource distribution inequality against the principles of sustainable development (social injustice on the allocation of resources within generations, inequity of distribution of resources between generations);
- III). loss to the state and local budgets, which is reflected in social programs (education, science, culture, security);
- IV). increase of the expenditures for the cultivation, protection and restoration of forests;
- V). reducing feedback between state investments in the forest cultivation and collection of revenue from harvest (profits are going to those who are harvesting illegally).

Environmental implications of illegal harvesting are: loss of biodiversity, climate change, intensified erosion processes, disturbances for the hydrological regime, occurrence of natural disasters due to unfavourable of harvesting technology, decrease the stability of

ecosystems, reduce the protective functions of forests, floodings on cutting areas, mountain rivers and roads by wood residues.

Deficiencies in the forest control system, which caused by broad scale illegal cutting: breaking of law and harvesting operations, corruption, conflicts of different agencies interests, lack of progress in implementing the concept of sustainable forest management [14].

During the survey we asked respondents from local forest depended community how active is your community in the protection of forest resources from illegal harvesting. And answers were next: more passive than active – 35.3% of respondents, more active than passive – 21.6%, completely passive – 19.6%, very active – 3.9% and difficult to respond – 19.6%.

Community members underlined next point for protect the forest resources from illegal logging community can do (Fig. 7): control timber harvesting and transport of round wood production, control timber harvesting for firewood, demand access to information about forest management activities, influence the process of certification of forest management during the period of community input, take part in forest decision-making, organize community meetings on questions of forest management.

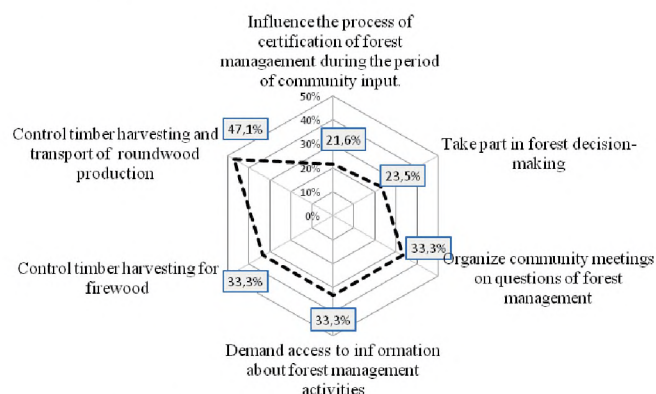


Fig. 7. What can your community do to protect the forest resources from illegal logging?

Also the main measures that can eliminate (or decrease) illegal loggings are:

- I. reducing unemployment and increasing welfare,
- II. increased penalties for illegal activities in the forests,
- III. strengthening of administrative and criminal liability,
- IV. strengthening public control,
- V. forest certification,
- VI. community participation in planning of forest operations.

Analysis legal access to forests products as main component of forest-dependent communities' well-being. Forest-dependent communities rely on forest resources, e.g. working in forest industry, and also on NWFPs which have seasonal and cyclical yields. An important factor in ensuring the well-being of those communities is their access to forest resources [14]. We also analyzed how ease for local communities is to get legal access to obtaining forest products including wood and non-timber forest products, hunting and

grazing rights.

When we asked how easy is legal access to commercial timber in your area 56% community members responded that it is difficult but possible to get wood in legal manner and 34% responded that they do not face significant problems with legal access. Community members report that they obtain commercial wood for construction and household needs (they need to select no more than three responses) through forest enterprises (official) – 45.1%; bought from local villagers (willingly produced) – 15.7%; through intermediaries (enterprises and individuals) – 15.7%; through forest manager (unofficial) – 13.7%; independent – 5.9% and through village council – 3.9%.

Forest-dependent communities' members report that they do not face significant problems with legal access to firewood in their area (56.9%) and 39.2% of respondent said that it is difficult but possible to get wood in legal manner. Only for 2% of community members responded it is impossible to get wood in legal manner. The highest part of respondents obtains a firewood through obtain a permit from forest authorities (75.9%). Some interview participants bought firewood from other local community members (15.7% and 13.7% independently harvested firewood in a forest. Only 2% of respondents receive firewood from the as a social service from state forest enterprises.

Community members report that they have no significant problems with legal access to collect mushrooms, berries, fruits, medicinal raw materials in the forests (90.2% of respondents). 7.8% of interview participants have some restrictions to access and one respondent said that he hasn't legal access to gather these products in the forest.

When we analyse how much free access to hunting have local forest depend community the picture was next: 66% of respondents have some restrictions to access, 20% – haven't significant problems with legal access and 8% – no legal access.

Free assess of local forest-dependent community members to recreation and tourism is an important factor in ensuring the well-being of those communities. 70.6% community members said that they haven't face significant problems with legal access and 21.6% - there are some restrictions.

Very impotent factor for community well-being is a free access to grazing (because many people in forest depend area have own household farms with cows, sheep's, horses). Community members report that they have not face significant problems with legal access (54.9%), but sometimes there are some restrictions (39.2%). Only 2% of respondents have always restrictions with it.

International agreements, resolutions, conventions, declarations and laws of Ukraine currently do not offer desired result in ensuring the legal mechanism for transparent process of communities (as well as other stakeholders) participation in of forest resource management for improving their well-being. This circumstance contributes to poor awareness of forestry-dependent communities with their rights on resource management, absence of mutually fruitful cooperation

between communities and forestry managers and in most cases – deficit of local residents (communities' involvement) into forest resource decision making processes.

Laws for ensuring well-being. Legislative frameworks of forests and forest resources management in Ukraine were formulated initially in the Forest Code of Ukraine (2006) and Law on the Environmental Protection of Ukraine (1991), and other legislative documents and government regulations.

In Ukraine, a separate Forest Policy has not been formulated. It's currently discussed in the framework of the FLEG 2 Program projects. Instead, the Forest Code of Ukraine, which is the main legislative document in Ukrainian forest management, defines the role of Ukrainian forests [16]. According to the Forest Code of Ukraine Ukrainian forests are national assets whose designated functions, depending on their locations, have predominantly ecological (water protection, conservation, sanitation, recreation), aesthetic, educational and other uses, the use and exploitation of which are restricted and subject to State monitoring and protection [1].

Several countries have enacted legal instruments focusing specifically on the protection and sustainable development of mountainous areas. In the Alps, the Alpine Convention, which includes the governments of France, Georgia, Italy, and Switzerland, is an example of this trend. One of the most important recent developments in the protection of the Carpathian ecological region has been the creation and signing of the Carpathian Convention [19].

Ukraine signed The Convention on the Protection and Sustainable Development of the Carpathians [21] which defines the implementation of all-round policies directed towards the conservation and sustainable development of the region to improve the quality of life, strengthen local economies and communities and preserve natural values and cultural heritage. Signing the Convention the sides decided to cooperate for the protection and sustainable development of the Carpathians with the goal to improve the quality of life, consolidation of local economies and communities, saving natural resources and cultural heritage. The participants of the Convention are carrying out the policy that guarantees the participation of the local people in decision-making concerning protection and sustainable development of Carpathians [6].

Also background for international cooperation there are: Convention on Biodiversity, Kyoto Protocol on the UN Framework Convention on Climate Change (2004), MCPFE resolutions: S1-S4, H1-H4, L1, L2, and V1-V5.

Several European laws include legal and policy mechanisms for improving well-being of mountain communities by law mandating resource transfer, investment in health and education, reinvestment of profits from the exploitation of mountain resources, diversification of economic activities, and incentives for the development of the appropriate technologies.

In Ukraine "The Law on the Status of Mountain and

Human Settlements, January 12, 1995" seeks to protect the material security of vulnerable mountain population by ensuring the social and economic development of mountain settlements. The law calls for provision of subsidies, loans, additional payments (20% from basic payment) to student's scholarships, pensions from central government, as well as technical and financial infrastructure development. Currently because of the deficit of the state budget this law is not fulfilled.

Legally mandated investments in livelihood strategies could strengthen local communities and reduce out-migration and pressure on fragile resources such as forest and farmland.

For ensuring wellbeing of local forest dependent communities in Ukrainian Carpathians we need to support best practices for SFM and community-based forest management approach.

SFM means the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems [10].

Community-based forest management is a property rights regime that enables rural communities to directly benefit from forests and that can lead to greater participation, reduced poverty, increased productivity and diversity of vegetation and the protection of forest species [7].

During our survey, we asked local communities members about their expectations for perspective outcomes if the community would have more rights in forest management planning and forest products harvesting activities (Fig. 8).

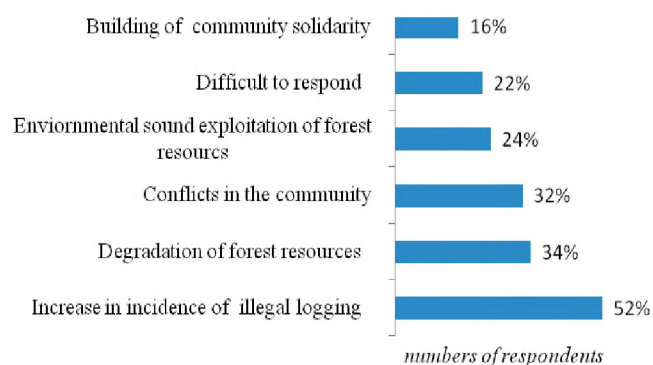


Fig. 8. Expectations concerning the outcomes if the community would have more rights in forest management planning and harvesting

The results show more pessimistic expectations than optimistic which can be explained by lack of forest community management skills.

Discussion and Conclusions. Forest-dependent and local communities are important stakeholders and in many different ways can make essential contributions to the implementation of SFM. At the same time, these stakeholders are also challenged with limited financial resources. Whilst ensuring sustained sources of

financing for communities thus appears as an obvious necessity, it also comes with a number of challenges.

In order to achieve efficient use of forest resources and increasing level of forest dependent community well-being local it's needed to focus on the following issues:

- I. create a community group of the most competent people who have potential to be influential in the forestry decision-making (56.9% of respondents),
- II. increased level of environmental awareness and level of legislation for SFM (55%),
- III. raising public awareness of community members about their have potential to be influential in the forestry decision-making (47%),
- IV. greater cohesion and order, community spirit, the ability to manage their own affairs (37.3%).

The recent events of the Revolution of Dignity and subsequent political turmoil have resulted in repercussions in civil society that have percolated to the community level. After the Maidan events, the communities surveyed in this study showed increased willing to address their concerns to the village council and pressure the forest management authorities to make changes that reflect community needs such as: closing illegal sawmills, combating graft and corruption of forest officials and increasing value-added manufacturing instead of exporting roundwood.

SFM, community-based management, smart development of forest-dependent mountain territories and communities – such strategies should allow for increasing of human well-being, community resilience without destroying fragile mountain ecological sustainability.

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ВНЕСОК ЛІСОВОГО ГОСПОДАРСТВА У ДОБРОБУТ ГІРСЬКИХ ЛІСОЗАЛЕЖНИХ ГРОМАД УКРАЇНСЬКИХ КАРПАТ

Проаналізовано компоненти добробуту гірських лісозалежних громад в Українських Карпатах, а також роль лісів у забезпеченні добробуту цих громад на підставі опитування таких категорій респондентів: фахівці лісового господарства, представники малого бізнесу у сфері лісового господарства та місцевої лісозалежної громади. Досліджено основні загрози, що спричиняють зниження добробуту гірських лісозалежних громад, у тому числі незаконні рубання лісу. Аналіз легального доступу місцевих громад до деревних та недревних ресурсів лісу, як один з основних компонентів добробуту досліджуваних громад, проведено на основі результатів

опитування цих громад. Результати дослідження показують, що в широкому сенсі економічні, екологічні, соціальні, культурні та естетичні функції лісів сприяють добробуту гірських лісозалежних громад в Українських Карпатах. Стале управління лісовим господарством на інноваційний підходах, лісовий менеджмент, який орієнтований на потреби місцевої громади та усіх зацікавлених сторін значною мірою можуть сприяти підвищенню добробуту та зміцненню резистентності до зовнішніх впливів цих громад, водночас не порушуючи стійкості гірських екосистем.

Ключові слова: екосистемні послуги лісів, лісозалежні громади, компоненти добробуту, незаконні рубання лісу, доступ до лісових ресурсів, стале ведення лісового господарства

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ВКЛАД ЛЕСНОГО ХОЗЯЙСТВА В БЛАГОСОСТОЯНИЕ ГОРНЫХ ЛЕСОЗАВИСИМЫХ ОБЩИН УКРАИНСКИХ КАРПАТ

Проанализированы компоненты благосостояния горных лесозависимых общин в Украинских Карпатах, а также роль лесов в обеспечении благосостояния этих общин. По результатам проведенного исследования изучено состояние лесов исследуемой территории с такими категориями респондентов: специалисты лесного хозяйства, представители малого бизнеса в сфере лесного хозяйства и местной лесозависимой общины. Исследованы основные угрозы, вызывающие снижение комплексного благосостояния населения горных территорий, зависящих от лесов, в том числе незаконные рубки леса. Анализ простоты легального доступа местных общин к древесным и недревесным ресурсам леса как один из основных компонентов благосостояния исследуемых общин проведено на основе результатов опроса этих общин. Результаты исследования показывают, что экономические, экологические, социальные, культурные и эстетические функции лесов способствуют благосостоянию в широком смысле горных лесозависимых общин в Украинских Карпатах. Устойчивое управление лесным хозяйством на инновационных подходах, лесной менеджмент, ориентированный на нужды местной общины, «smart»-развитие лесных горных территорий и общин в значительной мере может способствовать повышению благосостояния и укрепления устойчивости этих общин, не разрушая в то же время экологической устойчивости горных экосистем.

Ключевые слова: экосистемные услуги лесов, лесозависимые общины, компоненты благосостояния, незаконные рубки леса, доступ к лесным ресурсам, устойчивое ведение лесного хозяйства