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Section 1. Biology

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THE STUDY OF PROTEOLYTIC ACTIVITY OF PHYTOPATHOGENIC RHODOCOCCUS, PSEUDOMONAS AND XANTHOMONAS SOME STRAINS

Abstract. The problem of phytopathogenic microorganism harm for is very important for agriculture and horticulture. Proteases various types are well-known for human and animal opportunistic pathogens. Current research is devoted to the study of proteolytic activity and antibiotic resistance in 9 strains very common phytopathogens: *Rhodococcus fascians*, *Pseudomonas syringae*, *pv. syringae*, *P. syringae*, *pv. tabaci*, *Xanthomonas beticola*, *X. vesicatoria*.

Keywords: Phytopathogenic bacteria, proteolytic activity, antibiotic, *Pseudomonas*, *Xanthomonas*, *Rhodococcus*.

Abstrakt (Anmerkung)

Das Problem der Schädigung durch phytopathogene Mikroorganismen ist für die Landwirtschaft und den Gartenbau sehr wichtig. Proteasen verschiedener Arten sind für humane und tierische opportunistische Pathogene gut bekannt. Die aktuelle Forschung widmet sich der Untersuchung der proteolytischen Aktivität und Antibiotikaresistenz in 9 Stämmen sehr verbreiteter *Phytopathogene*. *Rhodococcus fascians*, *Pseudomonas syringae*, *pv. syringae*, *P. syringae*, *pv. tabaci*, *Xanthomonas beticola*, *X. vesicatoria*.

Schlüsselwörter: Phytopathogene Bakterien, proteolytische Aktivität, Antibiotikum, *Pseudomonas*, *Xanthomonas*, *Rhodococcus*.

Introduction

Phytopathogenic bacteria are the cause of the range of agricultural crops diseases: bacteriosis of

plant different organs [1, 449-460; 2, 5]. *Pseudomonas*, *Xanthomonas* and *Rhodococcus* representatives are the most common phytopathogens. Their negative impact on agricultural production quality is very notable in various geographical zones of Earth, due to their high adaptivity [3, 2; 4, 6]. The resistance of phytopathogens to the plant protection preparations is a huge problem [5, 483-484]. The main components of them are antibacterial substances, such as like antibiotics (AB). But year after year, AB efficiency decreases, that led to the increase of AB using volumes. This phenomenon is well-known as antimicrobial resistance [6, 147-151]. The broad usage of AB led to the decrease of agricultural production quality, what led to the negative impact on its consumer's health [7, 795; 8, 688]. Thus, it is important to study the factors of pathogenicity and

resistance for their further targeting for appropriate novel antimicrobials elaboration. One direction of it an implementation of new classes of substances for plant protection, such as like tartaric acid derivatives [9, 644–659]. Another way is the resistance overcoming by the enzyme inhibitors, which are being used as antiviral drugs [10, 87–95]. In current paper, proteolytic activity of some phytopathogens was discussed for further targeting for appropriate protease inhibitors elaboration and usage.

Materials and Methods

9 bacterial strains of *Pseudomonas syringae*, *pv. syringae*, *P. syringae*, *pv. tabaci*, *Xanthomonas beticola*, *X. vesicatoria*, *Rhodococcus fascians* from The National Collection of Microorganisms of Microbial Depository Center (MDC), “Armbiotechnology” SPC, NAS RA were used [11, 32–38]. Total enzyme (gelatinase and caseinase) qualitative analysis was done on milk agar with casein and gelatin appropriately. Caseinase activity was also defined by the method of photographic film [12, 21–24; 13, 129–134]. AB resistance tests were carried out due to the standard protocols,

with the following AB: Amp/ampicillin, Amx/Amoxicillin, Amc/Augmentin, Cfx/Cefixime, Cro/Ceftriaxone, Kan/kanamycin, Stp/Streptomycin, Cip/Ciprofloxacin, Tcn/Tetracycline, Azm/Azithromycin, Cam/Chloramphenicol (“Astoria”) [14, 100]. The genetical analysis were carried out by the total and plasmid DNA isolation, gel electrophoresis (0.8%–2.5%) and transformation [15, 32]. Digital analysis of results was performed by ImageJ software [16, 1670–1678]. The statistical analyses were done due to standard protocols of Microsoft Excel program package.

Results and Discussion

The results of 3 series of experiments are summarized in table 1. According to the presented data proteolytic activity is presented in all the studied strains. The maximum expression in visible after 96h of experiment. In case of 24h and 48h in some strains it is not notable, while in some other strains it is presented by very low-level of substrate decomposition. It correlates with the well-known fact about proteases wide diapason in pathogens of *Pseudomonas* [17, 5993–6002].

Table 1. Enzymes of phytopathogens

| Bacterial Strain | | Collagenase/Gelatinase on 0.6% agar + gelatin | | Gelatinase on method of photographic film | | Zone of Caseinase activity on 1% milk agar | |
|------------------|---|---|-----|---|-----|--|------|
| | | 24h | 96h | 24h, 48h | 96h | 24h | 96h |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 8628 | 1 | + | + | + | + | + | + |
| | | | | | | 13mm | 33mm |
| 8647 | 2 | + | + | – | + | – | + |
| | | | | | | | 38mm |
| 8651 | | + | + | + | + | + | + |
| | | | | | | 4–5mm | 31mm |
| 8653 | | – | – | – | – | – | + |
| | | | | | | | 24mm |
| 8680 | 3 | – | + | – | + | + | + |
| | | | | | | | 10mm |
| 8681 | | + | + | + | + | + | + |
| | | | | | | 12mm | 17mm |
| 8657 | 4 | + | + | + | + | + | + |
| | | | | | | | 11mm |
| 8663 | | + | + | + | + | + | + |
| | | | | | | | 35mm |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|---|---|---|---|---|---|------|
| 8736 | 5 | - | + | - | + | - | + |
| | | | | | | | 30mm |

1 – *Rhodococcus fascians*, 2 – *X. vesicatoria*, 3 – *X. beticola*, 4 – *P. syringae* pv. *tabaci*, 5 – *P. syringae*, pv. *lachrymans*; “+” – activity presence, “-” – activity absence, “+*” – low activity at the initial stage of experiment; activity zones are given in mm.

According to the results, the genes of enzymes (gelatinase and collagenase) are inductive and are actively expressed after the induction by the appropriate substrate presence in cultural media. The digital analyses of the decomposition of milk casein are presented on fig1. According to the re-

sults, the maximal level of caseinase expression is in *X. vesicatoria* 8647. All the strains contain plasmids with different molecular weight. Due to transformation experiments, they don't carry extracellular caseinase, such as like the genes of other proteases.

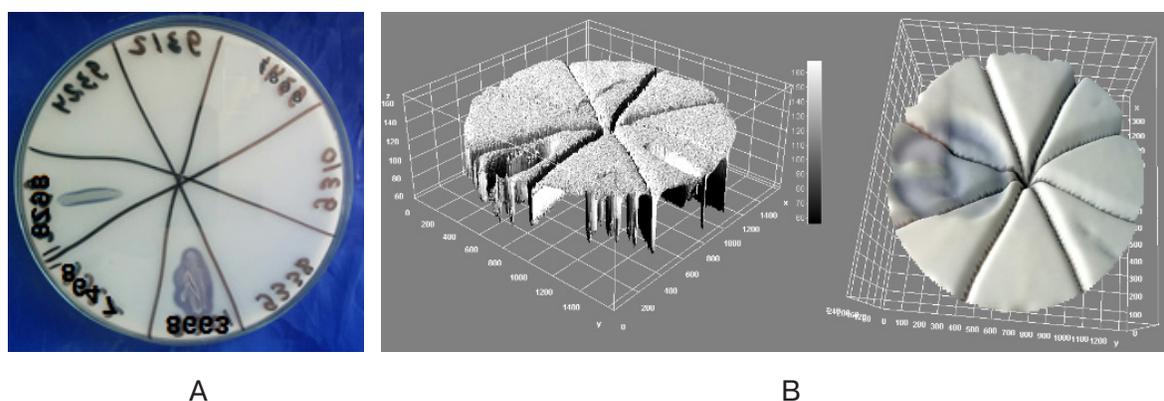


Fig. 1. *X. vesicatoria* 8647 caseinase photo(A) and digital analysis (B)

AB resistance was tested on 13 mainly used ones. There were chosen agricultural and medical usage AB. It is important, because during the 2020 pandemic, the huge amounts of AB were spread in environment with waste waters. Thus, the main aim was to test soil phytopathogens resistance to AB such as like azithromycin and ciprofloxacin, which are anti-coronavirus drugs [18, 121]. According to the results: *P. syringae*, pv. *tabaci* 8628i, *X. vesicatoria* 8647 and *Rh. Fascians* are resistant to Cro, Cfx, Amx, Amp, Amc, Pcn; *X. vesicatoria* 8653 is resistant only to Amp, Amc; *X. vesicatoria* 8651, *X. beticola* 8680, 8681 and *X. vesicatoria* 8653 were absolutely sensitive to all the tested AB; *P. syringae*, pv. *lachrymans* 8736 was resistant to Tcn, Cro, Cfx, Pcn, Amx, Amp, Gnc, Cip; *P. syringae*, pv. *tabaci* was resistant to Kan, Stp, Gnc, Tcn, Pcn, Amx, Cfx, Cro. It is correlating

with the literature data about the multiple resistance of *Pseudomonas* and *Xanthomonas* genera [19, 1–7].

Conclusion

During the tests on solid cultural media, only *X. vesicatoria* 8653 and *P. syringae*, pv. *lachrymans* 8736 have not demonstrated collagenase activity, while in *X. vesicatoria* 8647, 8651 activity low level was noted. By the II method application, the activity presence was proved for *P. syringae*, pv. *lachrymans*, 8736, *X. vesicatoria* 8647, *X. beticola* 8680 strains within 96h. After it, caseinase was indicated for all the tested strains. It might be concluded that the studied extracellular activity of these microbes has the key role in their metabolism and pathogenesis processes. Thus, the inhibition of it might have a significant importance for the combating of appropriate phytopathogens of agricultural crops.

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Section 2. Engineering sciences in general

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FIRE AND EXPLOSION PREVENTION FOR RESIDENTIAL AREA IN VIETNAM – SITUATION AND SOLUTIONS

Abstract. In urban areas in Vietnam as well as in other countries around the world, residential areas are planned to be built and developed with high density. Along with that is the potential risk of fire and explosion affecting the lives, activities, health and lives of people. The article is based on assessing the current situation, proposing solutions to improve the effectiveness of fire and explosion prevention for residential areas in Vietnam, and at the same time, the experience of countries around the world can refer to the organization implementing this work.

Keywords: Prevention of fire and explosion; residential area; Vietnam.

1. Make a problem

According to statistics, in Vietnam, there are: 83.564 residential areas, including 4.923 residential areas with high risk of fire and explosion; 23.257.601 houses for households; 1.257.508 houses combined with production and business, of which 302.849 establishments are not included in Appendix I; 42.912 establishments listed in Appendix III; 911.747 establishments under Appendix IV of Decree No. 136/2020/ND-CP. According to statistics from June 1, 2022 to December 15, 2022, there were 983 fires in Vietnam, killing 65 people, injuring 36 people and property damage was estimated at 932,140 billion VND. Of which, 538 fires occurred in households and houses in combination with production and business (accounting for 54.7%), killing 29 people (accounting for 44.6%), injuring 20 people (accounting for 55,55%), property damage was nearly 37 billion VND (accounting for 4%), specifically: (1) There were 400/538 fires at household houses, killing 22 people, injuring 07 people, and causing

damage property damage was estimated at 17.7 billion VND; (2) there were 138/538 fires at houses in combination with production and business, killing 07 people, injuring 13 people, and causing damage to property estimated at 19.3 billion VND [1]. The above figures show serious damage, especially when fires and explosions occur in residential areas; On that basis, researching and proposing solutions to contribute to the high efficiency of fire and explosion prevention for residential areas in Vietnam is urgent and has profound significance in current practice.

2. Reality

2.1. Result

– Propaganda and building movement of all people for fire prevention, fighting and rescue:

Actively coordinate with the Department of Information and Communications, information and communication agencies and authorities at all levels to strengthen propaganda on the mass media, directly to agencies, organizations, residential areas and people; promoting propaganda and mobilizing

people to install the 114 Fire Alarm application, use Zalo of the Police Department of Fire Prevention, Firefighting and Rescue, participate in building and maintaining the models and movements created strong change in awareness, consciousness and responsibility of Party committees, local authorities, mass organizations, neighborhood groups and people for fire prevention, fighting and rescue. In it, there are many good and effective ways to do it, such as:

- + Regarding propaganda: Maintain weekly and monthly broadcasts on local radio and television stations; posting news and articles on the portal of the Provincial Police, Zalo and Facebook application platforms to attract many people to access and follow; send free SMS to mobile subscribers; propaganda on the commune-level loudspeaker system, bus screens, lottery tickets, leaflets, banners, billboards, posters in crowded places ...; integrate propaganda on fire prevention and fighting in activities of cell branches and residential groups in residential areas; hand out fire prevention manuals to households; mobilize people to install and use the application Fire Alarm 114 and Zalo Police Department of Fire Prevention, Fire Fighting and Rescue. Specific results: Published 4.893 times of reportages, instructional clips, news articles on television; propagated 526.298 times of propaganda on radio stations at grassroots, communes, wards and townships; issued 2.583.429 leaflets, 113.327 banners and slogans; propaganda on social networking platforms Zalo, Facebook 744.159 times; send 46.386.583 SMS to people's phone numbers; organized 490.758 direct propaganda sessions with 2.617.499 participants; integrated propaganda through activities of cell branches and residential groups was 100.666 times; 390.887 people downloaded and used the application, 4.072.563 million visits to the Fire Alarm application 114 [1].

- + Regarding the campaign to open the second escape route: 38/63 localities have basically completed the mobilization of 100% of houses with 02 floors or more to have 02 escape routes that have opened the second escape route. Specific results:

There are 4.602.140/5.086.748 households that have opened the second exit through the balcony, loggia, the entrance to the roof (reaching 90%); mobilize 4,207.310 households to equip themselves with fire-fighting equipment [1].

- + Regarding propaganda, mobilizing people to install and use the application Fire Alarm 114 and Zalo Fire Prevention, Firefighting and Rescue Police Department: There were 390.887 turns of people downloading and using the application, 4.072.563 million visits to the 114 Fire Alarm application, thereby, helping people have more forms to report fires, explosions, accidents, incidents and information channels to update news on fire prevention, fighting and rescue [1].

- Regarding the establishment and organization of activities of the civil defense force: 81.738 civil defense teams have been established out of a total of 87.376 unit subject to the requirement to establish a civil defense team (accounting for 93.54%) with 808,118 members (of which, ranked 15.006 teams well; fairly rated 38.125 teams; averaged 25.020 teams; rated weakly 1.041 teams; unclassified 2.546 teams), thereby promoting efficiency in firefighting and extinguishing many fires before the police force of fire prevention, fighting and rescue arrives at the scene, meeting the motto "4 on the spot" [1].

- Building a safety model of fire prevention and fighting in residential areas.

Work closely with local Party committees and authorities to promote propaganda and mobilize people to participate in building safety models and movements on fire prevention and fighting, especially the model of "Safety Interaction Teams on fire prevention and fighting" and "Public firefighting points" in residential areas, specifically:

- + Building and replicating models of fire prevention and fighting safety: Currently, the whole country has built, replicated and effectively maintained many models and movements of fire prevention and fighting safety in residential areas residential areas such as: Model of safe residential area for fire prevention

and fighting; my house has a fire extinguisher; install public firefighting points in deep alleys; household safety in fire prevention and fighting according to the motto 4 on the spot; safe residential groups for fire prevention and fighting; women's shock team in fire prevention and fighting; mobilize the socialization of fire prevention and fighting to cover fire extinguishers in residential areas; household safety in fire prevention and fighting; 3 have 3 know, 3 fire prevention and fighting safety; cult, wallize; donate land to widen the alley; registration not to occur fire; fire prevention and fighting mailboxes; wards, communes and townships fire prevention and fighting safety points; 4-layer fire prevention and fighting model on fire prevention and fighting; itinerant propaganda; The family has at least 2 escape routes and has a fire extinguisher and means of escape; fire truck.

+ Building and replicating models of fire prevention and fighting safety groups and public firefighting points: 1.191 models of fire prevention and fighting safety groups have been built nationwide, and 556 fire fighting points have been built public fire. Continuing to replicate 3.058 models of fire prevention and fighting safety groups, 3.176 public firefighting points, there are now 4.249 models of fire prevention and fighting safety groups nationwide, 3.732 fire fighting points public.

– Safety inspection on fire prevention and fighting

From June 1, 2022 up to now, 13.623.331 turns of 24.515.109 households, houses for living in combination with production and business have been inspected. Through the inspection results, 4.292.489 omissions were detected, 245.546 violations were detected, and 14.206 violations were handled with an amount of more than 19.1 billion VND. Major violations exist: Failure to ensure fire prevention between living areas, emergency exit stairs and parking, production and business areas; there is 01 emergency exit on the 1st floor and install many layers of protective doors (wing doors, folding doors, rolling doors ...), installing tiger cages, iron cages, billboards at the lot, balcony, doors windows obstructing the 2nd exit of the house (emer-

gency exit) ...; the electrical system does not meet the requirements for fire prevention and fighting, and an additional connector is added to the line in service of production and business; there are not enough means, fire alarm, fire fighting equipment, rudimentary demolition tools..., especially in production and business areas. There are 907 cases of being temporarily suspended from operation; 261 cases are under active suspension [1].

– Construction and practice of fire fighting, rescue and rescue plans

Has built 9,944 fire fighting plans and 6,820 rescue plans; organized practice of 2,629 fire fighting plans and 2,934 rescue plans [1].

2.2. Comment

– *Advantage*

Police forces of fire prevention, fighting and rescue of local police in Vietnam have actively advised the People's Committees of the same level to issue many documents on implementing fire prevention and fighting work. under the direction of the Prime Minister, the Ministry of Public Security (Directive No. 32/CT-TTg of the Prime Minister; Plan No. 273/KH-BCA-C07 of the Ministry of Public Security); promulgating plans and focusing, drastic in implementation; directing 100% of district and commune police departments to advise the People's Committees of the same level to direct the implementation of mobilizing people to participate in building models of fire prevention and fighting safety teams, public fire fighting spots... in residential area.

– Party committees and local authorities have paid attention to, directed and organized the implementation of state management responsibilities for fire prevention and fighting according to decentralization. The awareness and sense of responsibility for fire prevention and fighting of the heads of establishments, households, owners of production and business households and people have changed positively, voluntarily overcoming shortcomings, violations of the law violations on fire prevention and fighting, opening a second escape route through the balcony, loggia, equipping with

portable fire extinguishers, participating in fire prevention and fighting activities in residential areas; In many localities, there were no fires of this type.

– *Survive, limit*

+ The work of advising the People's Committees of the same level to promulgate documents directing and implementing fire prevention and fighting work at the Police in some localities is still slow and not drastic progress has not been guaranteed: 11/63 localities have not yet issued a resolution stipulating the regular level of support for captains and vice captains of people's squads; 25/63 localities still have households that have not opened a second escape route, but as required, have 02 escape routes.

+ The propaganda and building of the all-people movement for fire prevention and fighting is not suitable for the target audience, not directly to the people, and the effectiveness is not high. The construction of the model of fire prevention and fighting safety groups and public fire fighting points in some localities has focused on completing the number according to the target; the model has not been actively replicated or the model has not yet met the guidance of the Ministry of Public Security and the Vietnam Fire Prevention and Fighting Police Department.

+ The inspection and guidance for households, houses for living in combination with production and business has not yet ensured the quality, and all contents have not been checked according to the instructions of the Fire Prevention and Fighting Police Department and rescue – Vietnam's Ministry of Public Security, failing to detect all existences and violations of fire prevention and fighting; Proposals and instructions to overcome violations are not in accordance with regulations, do not provide requirements for implementation time.

+ The Party committees and administrations of districts and communes have not been drastic in fulfilling their responsibilities for state management of fire prevention, fighting and rescue, specifically: Safety conditions have not been regularly maintained. Regarding fire prevention and fighting for residential ar-

reas, there has not been a civil defense team in 100% of residential areas, members are mainly part-time (street guards, militia and self-defense forces, veterans, etc.), operation is a formality, lack of means and equipment for fire prevention, fighting and rescue. Commune-level police have not actively advised and assisted chairpersons of commune-level People's Committees to fully implement their responsibilities for state management of fire prevention, fighting and rescue as prescribed in Clause 2, Article 52. Decree No. 136/2020/ND-CP.

+ Heads of households, business households and people have not seriously performed their responsibilities for fire prevention, fighting and rescue: (1) Failing to remedy shortcomings and violations already approved by the agency management inspection, recommendations or form implementation, deal; not interested in investing in equipment, equipment for fire prevention, fighting and rescue, or having equipment but not periodically checking and maintaining it, leading to damage ...; (2) not actively participating in fire prevention and fighting activities in residential areas (participating in propaganda sessions, civil defense forces, building safety models on fire prevention and fighting); (3) Fire and explosion also occurred, causing serious damage to people and property, causing public concern and concern in society in some localities.

– Causes of the existence, limitations

+ In many existing residential areas in Vietnam, the traffic infrastructure is not guaranteed for the operation of fire engines, there is no urban fire fighting water supply system, there are many types of production facilities and goods warehouses, residential houses combined with production activities alternately in residential areas (including constructions and construction establishments that are not licensed according to regulations) often fail to meet requirements for fire prevention, fighting and rescue.

+ Awareness and awareness of complying with the provisions of the law on fire prevention, fighting and rescue of a part of households, business households

and people in Vietnam is still limited serious; psychologically, subjectively, neglectfully, disregard fire prevention, fighting and rescue at places of residence, production and business; failing to actively research and participate in fire prevention, fighting activities and rescue in residential areas; lack of knowledge and skills to handle fires and explosions and escape skills.

+ The awareness of the authorities on fire prevention, fighting and rescue is not really comprehensive and profound, and has not mobilized the effective coordination of all levels and sectors in the implementation of the project a set of fire prevention and fighting solutions for residential areas, households, houses in combination with production and business form, following the quantity, has not brought into full play the effectiveness of putting people as the focus and subject of fire prevention and fighting in households and residential areas. Commune-level People's Committees are not fully aware of their roles and responsibilities, have not been proactive and drastic in directing and organizing the performance of state management of fire prevention, fighting and rescue at commune level. In some localities, some places are completely assigned to the commune-level police to implement, but do not pay attention to directing, inspecting and supervising the organization of implementation.

+ Sense of responsibility, professional knowledge of fire prevention, fighting and rescue of a division of leaders, commanders and officers and soldiers of the police unit and locality in Vietnam, especially The commune-level police have not yet met the requirements or have not properly and fully fulfilled their assigned responsibilities; the staff of the commune-level Public Security Department is still lacking, concurrently holding many other tasks, and the implementation has not been timely and effective; leaders and commanders have not regularly supervised the performance of tasks of units and individuals, have not timely detected and handled officials who have not fully performed their assigned tasks, or been loose in management.

3. Solution

– Continue to seriously carry out the work of grasping the situation and basic investigation, not letting the situation of not knowing the “state of fire prevention and fighting”, “missing”, “missing” the area and ensuring 100% of establishments under the management of fire prevention and fighting that are able to make management records according to regulations; identify and make a list of key areas and areas (residential areas with high risk of fire and explosion, craft villages...), establishments that are likely to cause particularly serious consequences when fires and explosions occur in the area population to strengthen management measures on fire prevention, fighting and rescue.

– Guide 100% of households, residential houses combined with production and business from 2 floors or more to open a second emergency exit; 100% of houses for living in combination with production and business are equipped with portable fire extinguishers and rudimentary demolition tools; 100% of households have a plan to handle fire and explosion situations, escape and practice the plan.

– Strengthen communication directly to establishments, households and people; renovate propaganda contents, forms and methods suitable to each audience, coordinate with press and media agencies to promote propaganda and dissemination of legal knowledge and skills on fire prevention, fighting and rescue; complete a set of guiding criteria for building fire prevention and fighting safety models, building and replicating advanced examples in the all-people movement for fire prevention, fighting and rescue. Organize fire prevention, fighting and rescue for the civil defense force to improve efficiency in handling fire, explosion, incidents and accidents right from the moment they arise; mobilize people to install the Fire Alarm app 114, Zalo Police Department of Fire Prevention, Fighting and Rescue.

– Organize training for household heads, business household owners and people in residential areas. To proceed to ensure that 100% of households

and houses in combination with production and business have at least 01 person who is propagated, trained and mastered basic knowledge and skills on fire prevention, fighting and rescue, specifically: Fire prevention and fighting responsibilities of householders and individuals living and working in the household; fire hazards and fire prevention measures; how to handle fires in households; Note in escape, fire fighting and rescue, install and use Fire Alarm App 114, Zalo Police Department of Fire Prevention, Fighting and Rescue.

- Organize survey and statistics of households living in combination with production and trading of adjacent flammable and explosive goods and substances; quarters in residential areas, craft villages, densely populated alleys and alleys (households, houses for living in combination with production and business, inns, old collectives ...) with a length of 50m or more that the fire truck cannot approach the residential area. Make a list of joint fire prevention and fighting safety groups ensuring that 100% of houses for living in combination with production and business mentioned above join the joint group; “Public fire fighting point” at alleys and alleys and deploying to replicate.

- Carry out safety inspection on fire prevention and fighting for 100% of households and houses in combination with production and business; urge, guide and inspect the heads of households, business households, and heads of establishments to overcome shortcomings and violations in fire prevention, fighting and rescue already approved by competent authorities check and recommend. Handle 100% of violations on fire prevention, fighting and rescue detected during the inspection according to regulations.

- Completing the development of the Individual Housing Standard – General design requirements; promulgate a Resolution stipulating the regular level of support for the captain and Vice captain of the civil defense team; Regulations on the mechanism of responsibility of the heads and assigns of the People’s Committees of districts and communes in perform-

ing the function of state management of fire prevention, fighting and rescue in the province local.

- To seriously and effectively implement construction investment management when: (1) Formulating and approving construction planning projects or adjusting urban construction plannings according to the Planning Law must ensure the following contents: prescribed in Article 10 of Decree No. 136/2020/ND-CP [3]; (2) carry out the appraisal and approval of fire prevention and fighting designs, issue construction permits, take over for fire prevention and fighting, and put the works into operation for household houses may convert their functions in part or in whole into production and business according to the provisions of the law on construction, fire prevention and fighting; inspect and strictly handle violations.

- Reviewing business and storage facilities of chemicals with high risk of fire and explosion interspersed in residential areas to make plans for relocation, ensuring safety conditions for fire prevention, fighting and rescue; invest in equipping urban fire-fighting water supply systems in residential areas, especially fire-fighting water supply and arrange locations for initial fire-fighting equipment in neighborhoods and alleys...

- Strengthen inspection, supervision, and promptly correct the leadership, direction and organization of the implementation of fire prevention, fighting and rescue activities at the Departments, branches and local authorities; report to competent authorities for consideration of responsibility for irresponsible units and individuals in directing and managing fires and explosions that cause serious consequences in residential areas, households and houses in the combination of production and business.

4. Conclusion

In Vietnam as well as in other countries around the world, along with socio-economic development, the potential risk of fire and explosion in residential areas is increasing. Accordingly, the study and assessment of the results obtained, pointed out the

advantages, limitations and causes of the limitations, from which, proposed solutions to improve the effectiveness of fire and explosion prevention and control in the areas population in Vietnam. Hopefully, this is

a useful reference source in the prevention of fire and explosion in residential areas for countries around the world with similar or similar characteristics to the development of residential areas in Vietnam.

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Section 2. Political science

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THE ROLE OF MASS MEDIA IN VIETNAM'S ANTI-CORRUPTION CAMPAIGN NOWADAYS

Abstract. This study examines the impact of mass media in Vietnam on anti-corruption activities by using descriptive statistical methods, analytical methods, research and investigation, and surveys. The author then discusses some theoretical and practical issues about the role of the mass media in anti-corruption activities in Vietnam nowadays, laying the foundation for proposing some solutions to improve the effectiveness of the mass media in controlling the power enforcement of the State in general, and anti-corruption in particular.

Keywords: Mass media; anti-corruption; supervise; control; Vietnam.

1. Some theoretical issues on mass media in anti-corruption

1.1. Overview of mass media

“Mass media is understood as a system of media directed to influence a large number of social publics (people in different regions, country and region, or the international community) to inform, share, attract and gather, educate, persuade, and organize a large number of people to participate in solving economic-social-cultural problems that have been posed, [12]” wrote author Nguyen Van Dung. Based on the technical characteristics and communication methods, people divide mass media into different types: Books; newspapers; films; broadcasting; TV; advertisements; Internet; Tapes, video and audio discs [15, 12]. Since the press plays a crucial and fundamental role in mass media, it is frequently possible to use the press to talk about the media in a narrow sense. Vice versa, in order to talk about the media, we must first discuss the press. In the scope of this article, the author only mentions mass media in the

narrow sense which includes: Newspapers; broadcasting; TV.

1.2. Identify corrupt behaviors according to Vietnamese Law

Corruption means an officeholder's abuse of his/her official capacity for personal gain. According to Article 2 of the Anti-Corruption Law in Vietnam nowadays, corrupt acts include:

First, acts of corruption committed by office holders in state authorities, organizations and units include: Embezzlement; Taking bribes; Abuse of one's position or power for illegal appropriation of assets; Abuse of official capacity during the performance of tasks or official duties for personal gain; Acting beyond authority in the performance of one's duties for personal gain; Harassment for personal gain...

Second, acts of corruption committed by officeholders in non-state enterprises, organizations include: Embezzlement; Taking bribes; Bribing or brokering bribery to settle the affairs of the enterprise or organization for personal gain.

1.3. Mass media – an effective tool in anti-corruption nowadays.

The mass media fulfills its role in anti-corruption arising from the performance of its basic functions.

First is the information function. The information function is the most fundamental function of the media and it is thanks to this function that many corruption cases are revealed to the public. The media will accurately and objectively inform the public about past and current events, as well as provide information obtained during investigations of the individuals and public authorities.

Second, the mass media performs the function of supervising and social criticizing. The media's supervision function is critical in a democratic society where citizens must be aware of what their government is doing, Curran, J 2007 emphasizes "*The basic democratic function of the media is to act as a watchdog to check on the State*" [3]. The media acts as a watchdog, observing state activities and exposing political leaders' abuses and incompetence in order to caution them or warn the public of the need to replace them in the upcoming elections. Moreover, the mass media serves as a social critic, promoting and enhancing the government's accountability on issues of public concern and debate, thereby preventing corruption and acting beyond authority.

Third, the mass media becomes a forum for public discussion. In modern society, the press institution can create a "Public Sphere". The public sphere enables the publication of official reports on corruption and acts beyond authority, as well as voices expressing political views from political staff, interest groups, and the general public; it also enables people's will to reach the government quickly, clearly, and effectively.

Fourth, the mass media orients public opinion and reports public opinion. The media plays a role in orienting public opinion: "*The press may not always be successful at telling people what to think, but the press is extremely successful at telling people what to think about*" [1, 120] it has both the role of reporting and disseminating public opinion. Due to public pres-

sure, state agencies are being forced to investigate and handle corruption cases more quickly. In Western countries, especially the United States, mass media is considered the "*fourth power*", after the legislative, executive and judicial powers. And in China, up to 80% of corruption cases discovered are reported by the people and the press. The role of the people and the media in anti-corruption efforts are also highly valued and effectively promoted in Singapore, as Prime Minister Lee Kuan Yew stated: "*The greatest strength is public opinion, which rebukes and condemns the corrupt*" [2].

2. The practice of mass media participation in anti-corruption in Vietnam nowadays

Currently, approximately 40,000 people working in the journalism field, with approximately 17,000 working in the broadcasting sector. 17,161 people have been granted press cards for the period 2021–2025. 95.9% of journalists have a university or postgraduate degree [6]. Journalists are pioneers in the prevention and fight against corruption through their sharp-witted articles.

First, mass media must inform and propagate the Party's guidelines, lines, and policies, the State's anti-corruption laws, and the activities of the Central Steering Committee on anti-corruption. The mass media has spent a lot of time and columns analyzing, evaluating, and propagating the Party's guidelines, lines, and policies; State anti-corruption laws, such as: New points in the Document of the 12th and 13th Party Congresses on anti-corruption; Directive No. 27-CT/TW, dated January 10th, 2019 of the Politburo on strengthening the leadership of the Party in the protection of whistle-blowers and people who fighting against corruption and negatives acts... Nhan Dan, Tuoi Tre, and Thanh Nien newspapers have always had sharp journalistic works on anti-corruption; they also have many separate articles on their electronic interfaces, written by correspondents in 63 provinces and cities that implement content on anti-corruption, negativity, and wastefulness.

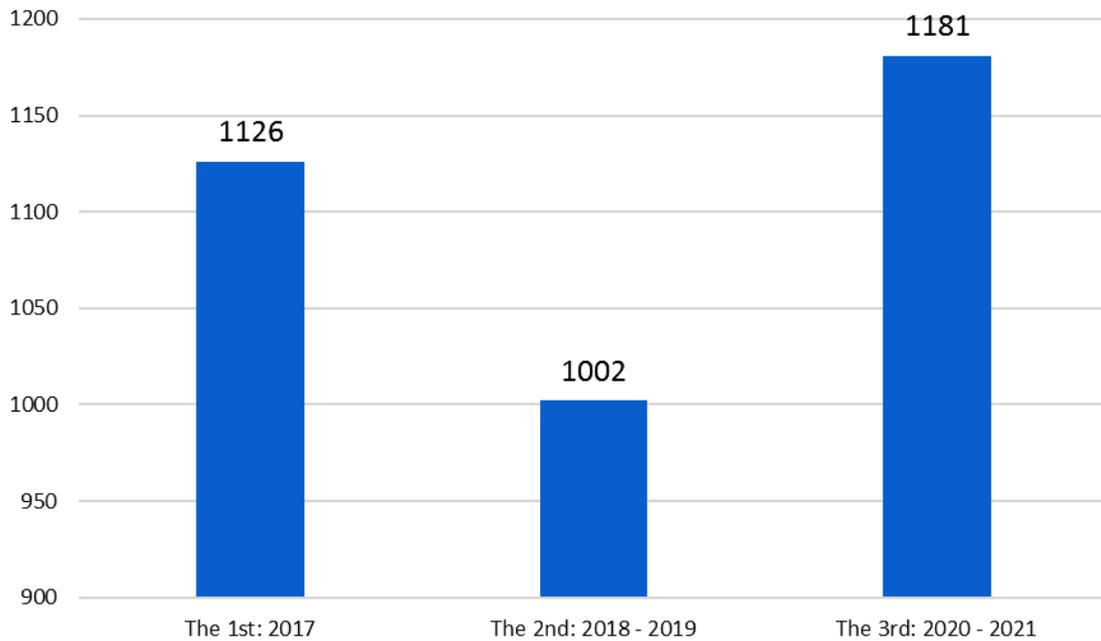


Figure 1. The number of journalistic works in the “Journalism in the Fight against Corruption and Waste”

Vietnam News Agency organizes many columns such as “*Internal Affairs*”, “*New documents and policies*”, “*Law*”, “*Anti-Corruption*” ... ; Vietnam Television has thousands of news, images and propaganda reports on news bulletins and on the system of categories, which are broadcast on the “golden hour” frame, such as “*Recognition of recession*”, “*Complete improving institutions on anti-corruption*”, “*Controlling power*”, “*No forbidden zones*” ... In particular, in recent years, various genres of films about political commentary and anti-corruption have also been produced such as: “*The Provincial Party Secretary*”; “*The Provincial Chairman*”, “*Cheating Justice*”, “*Life or Death*”. The Voice of Vietnam has published a number of articles: “*The Party’s anti-corruption campaign and the People’s trust*”; “*Hot above cold below*”; “*Fire up for the anti-corruption burning furnace*”... Furthermore, media agencies have produced many programs and reports reflecting the law construction and improvement, especially Law on Anti-corruption, Criminal Code, Law on Denunciations, Law on Thrift Practice and Anti-wastefulness, Law on Access to Information, Law on Cybersecurity... In the 5 years from 2016 to 2021, Nhan Dan Newspaper

has published more than 500 news, articles, photos related to anti-corruption and negative work; Vietnam News Agency has produced and broadcasted over 20.000 news articles, more than 5.000 photos; The Voice of Vietnam has conducted nearly 2.000 special programs, more than 8.000 news, articles and reportage; Vietnam Television has thousands of propaganda news, images and reports.

In addition, the mass media also provided full and comprehensive information on the activities of the Central Steering Committee for Anti-Corruption in inspecting and supervising the inspection of cases; initiating, investigating, prosecuting, and trialing serious and complicated corruption, economic cases that drew public attention. The most recent cases are related to Viet A Technologies Joint Stock Company, the case occurred at the Consular Department of the Ministry of Foreign Affairs, the cases occurred at FLC Group, Tan Hoang Minh Group and Advanced International Joint Stock Company. The mass media not only contributes to anti-corruption and negativity through its products, but it also plays an important role in promoting, forming, and developing people’s awareness of

anti-corruption and negativity. People increasingly put their beliefs in the Party and State's "non-stop" anti-corruption determination.

Second, the mass media detects corruption and negative cases.

By receiving people's reflections and denunciations through the "readers" column; letters from readers; or professional investigation, the media has verified to find authentic documents and evidence about the corruption cases to transfer to these the public and authorities. More than 70% of negative and corrupt cases were discovered by the press, such as the case of "million-dollar gambler" Bui Tien Dung and the big negative at PMU18; project on computerization of administrative activities (Project 112); insurance fraud occurred at Petrolimex Insurance Joint Stock Company (PJICO); Bai Chay bridge construction project; Vinashin case; Duong Chi Dung, Pham Cong Danh cases... or prominently, two corruption cases of Trinh Xuan Thanh and Phan Van Anh Vu:

About Trinh Xuan Thanh's case: When pictures of a Lexus 570 worth 5.7 billion with Trinh Xuan Thanh's blue-colored plate number running on Can Tho streets were posted all over social media, then immediately a series of articles on Vietnamnet, Vnexpress, Tuoi Tre online... all used the content of the Vice President's blue-colored plate as the title appeared on May 31st, 2016. Especially, on June 3rd, 2016, *Thanh Nien newspaper* published an article "Private car with blue-colored plate and "legacy" of Hau Giang Vice President". This article not only provides information about a vehicle with an illegal blue-colored plate but also presents unusual developments related to the working process. This "legacy" includes: *Firstly*, while Trinh Xuan Thanh was Chairman of the Board of Directors, Vietnam Oil and Gas Construction Joint Stock Corporation (PVC) lost more than 3,200 billion VND; *Secondly*, while PVC was in a serious loss and was on the verge of losing its capital, Mr. Thanh suddenly left the leadership position and was continuously appointed and moved to other important positions. In May 2015, Mr. Thanh

was rotated as Vice Chairman of the Hau Giang Provincial People's Committee for the 2011–2016 term.

Based on media feedback, the Office of the Party Central Committee issued Documentary No. 1200-CV/VPTW on June 9th, 2016, informing agencies of General Secretary Nguyen Phu Trong's direction to urgently examine, consider, and conclude the contents mentioned in the *Thanh Nien Newspaper*. On September 6th-8th, 2016, at the 6th meeting of the Central Inspection Commission, the Central Inspection Commission requested the Secretariat to expel Mr. Trinh Xuan Thanh from the Party. On September 16th, 2016, the Investigation Police Agency charged Mr. Trinh Xuan Thanh with intentionally violating the State's economic management regulations, resulting in serious consequences according to Article 165 of the Penal Code.

About Phan Van Anh Tu's corruption case: This is considered a major corruption case, causing significant damage to the State. The press investigated the violations done by Phan Van Anh Vu (Vu Aluminum) during the implementation of the Da Phuoc international urban area project led by Mr. Vu's Sunrise Bay Co. Ltd. A series of eight articles by journalist Duong Hang Nga published in the *Journal of Transport and Communications (GTVT)* from April 8th, 2017 to May 14th, 2017 provide the beginning for exposing violations in the Da Phuoc urban area. These articles include: Part 1. *Who is sponsoring the Da Phuoc international urban area project so that it can "freely" violate?* reflects Danang's public opinion on the illegal exploitation and utilization of minerals in the urban area (April 8, 2017). Part 2. *Violations in Da Phuoc urban area: "Boss" Phan Van Anh Vu thinks the Law... is as small as a cooking pot lid?!* (April 11th, 2017) reflects that the urban area has not yet undertaken an environmental impact assessment but is still under construction; additionally, even though the project has been suspended, sales transactions are still taking place. Part 3. *"Violations in Da Phuoc urban area: Illegal leveling and dubious transfer of project"* (April 17th, 2017). Part 4. *"Da Phuoc Da Nang*

urban area project (*The Sunrise Bay*) “passes” the Prime Minister? (April 23rd, 2017) The Sunrise Bay Co. Ltd has not reported to the Prime Minister to cancel the golf course planning of the project “Da Phuoc golf course urban complex. Part 5. “*Da Phuoc Da Nang urban area project: Disregarding the law on national defense and security?*” (April 27th, 2017) analysis of a series of violations of the law on defense – security. Part 6. “*The press simultaneously “exploited” the Da Phuoc urban area project in Da Nang*” (May 4th, 2017) raised concerns about having a “back” force to “pave the way” with a series of urban area violations. Part 8. “*Potential dangers of traffic accidents in Da Phuoc urban area: “Custom rules the law?”*” (May 14th, 2017).

Understanding the information reflected through the mass media, on April 10th, 2017, Permanent Deputy Prime Minister Truong Hoa Binh requested the Ministry of Public Security to urgently intervene to investigate, verify and clarify the contents of the above-mentioned Journal of Transport and Communications (GTVT). After the investigation process, the Investigation Police Agency of the Ministry of Public Security announced the decision to prosecute Mr. Phan Van Anh Vu for abuse of position and power while on duty on February 7th, 2018. On January 13th, 2020, the first-instance trial panel of the Hanoi People’s Court issued a judgment for defendant Phan Van Anh Vu with a total sentence of 25 years in prison for the crimes of “*violating the regulation of management and usage of State property, causing loss and waste*” and “*violating regulations of land management*”.

Third, propagate and praise collectives and individuals with outstanding achievements in anti-corruption; criticize and condemn acts that use anti-corruption to discredit organizations and individuals

Apart from reflecting on and providing information about the results of anti-corruption efforts, this is also considered a topic of interest and implementation by media agencies. For example, the articles “Lessons set an example”, “Protection of people fighting against corruption and negativity” (*Nhan*

Dan Newspaper); article “*Revealing 2,745 fake wounded soldiers records, two old farmers in Bac Ninh have not been rewarded yet*” (*Vietnam News Agency*); the documentary film “*Mr. Luc highway*”, “*An old man who spent 30 years to fight against corruption*” (*Vietnam Television Station*) ...; Online newspaper VOV. VN published an article “*Anti-corruption, a Ward Party Committee Secretary has been dismissed*”. The agencies also propagated the example of former Major Trinh Van Khoa who denounced the “witchcraft” case of a drug case document at the Police Security of Do Son District, Hai Phong City; etc...

Besides these outstanding results, the activities of the mass media in anti-corruption also have some limitations such as:

First, the mass media has not fully and promptly reflected the phenomena and negative corruption and waste cases that local residents have discovered and provided information about, such as the planning and compensation case in Thu Thiem; The major case of “*Viet A test kit*” Furthermore, while there are many articles about land, construction, traffic, and projects, some other fields, such as culture, physical training, and sports, appear to be lacking in the process of supervision and criticism of the mass media.

Second, mass media sometimes performs the anti-corruption progress inaccurately, some journalists “abuse the name” of social criticism to reflect a lack of fairness, a lack of scientific basis, one-sided analysis, and orienting public opinion towards personal gains, making it difficult for law enforcement agencies. At the same time, the media can also be damaging to the rights and interests of individuals, agencies, and organizations.

Third, many cases were discovered and raised by the media but were not pursued by the proper authorities, affecting the trust of whistle-blowers and those providing information to the media.

3. Some solutions to promote the effectiveness of mass media in anti-corruption in Vietnam today

First, build a team of journalists, journalists with pure enthusiasm, vision and talent. The capacity and professional responsibility of reporters/journalists is the

determining factor in the media's effectiveness in anti-corruption efforts. As a result, it is necessary to design training programs associated with professional practical skills, equipping general knowledge about politics, economy, and society, and building a comprehensive ethical awareness system of journalists in the process of training journalism students at universities. Furthermore, it is necessary to focus on retraining existing journalistic resources in the direction of catching up with the trend of the new media context, improving journalistic quality and ethics in the workplace.

Second, strengthen the legal mechanism to protect reporters and mass media agencies that report on corruption. The Project report "Research and communication of hindering behaviors to journalism operations" by the Institute for Research on Development Communication (RED Communication), shows that hindering behaviors are very diverse, including 12 types of behaviors such as: Avoiding providing information; disturbing; affecting, bribing to threaten, captivating people; assault causing injury; retaliation ... [14], particularly acts of intimidation, terrorism, and retaliation directed not only at reporters but also at their families. Approximately 40 cases of reporters were hindered during work every year. These hindering behaviors make journalists/reporters afraid of pursuing and exposing violations to the public. Therefore, a complete legal basis is required to protect journalists and mass media organizations in the fight against corruption and negativity. It is necessary to verify in the law provisions how journalists who participate in anti-corruption and negativity campaigns are protected. Only by this solution can strictly deal with and prevent acts of hindering and assaulting lawfully practicing journalists.

Third, ensure that the right of access to information for press agencies is implemented. Currently, Vietnam's legal basis recognizes the right of press agencies to access information very clearly and fully, as evidenced by the Law on Press, the Law on Access to Information ... However, the implementation of these rights in practice is disrupted by state agencies. In the group

of behaviors that hinder the press, the act of avoiding providing the information is the most common, accounting for 11 to 12%, in 2016 up to 96% of respondents had ever been hindered, much higher than 88% in the 2011 survey, nearly 36% had been hindered 5 times or more [14]. According to the evaluation report on the implementation of the Law on Access to Information (the second time) in Vietnam, the regulation on providing information has not been found, and the focal point providing information lists of nearly 60% of Central state agencies, 80% of provincial Departments of Justice, more than 90% of Provincial People's Committee Offices, and 93% of other state agencies in 8 provinces [4]. As a result, an independent monitoring mechanism in the implementation of the responsibility for accessing information from state agencies is required. Implement severe punishments for individuals and state agencies who violate the Law on Access to Information.

Fourth, it is necessary to strengthen the coordination between mass media organizations and the appropriate authorities in the fight against corruption and negativity. Anti-corruption and negativity agencies must strengthen their coordination with press agencies in order to provide and exchange information on fields, areas, organizations, and individuals displaying signs of corruption and negativity while carrying out their functions and tasks to report, advise, propose, and handle; strengthen coordination in the development of special topics and reports on corruption and negative cases, both to handle strictly and to draw lessons from experience, to overcome loopholes and inadequacies in institutions and laws.

4. Conclusion

It is obvious that the media and press agencies are crucial allies of the people in the fight against corruption. According to the results of the survey "Corruption from the Perspective of the People, Businesses and Cadres, Civil Servant and Public Employees," conducted jointly by the Government Inspectorate and the World Bank in 2012, the mass media revealed that is one of the most active and effective

institutions in detecting and investigating corruption in Vietnam [10]. However, in order to maximize and take advantage of the strengths of the mass media in anti-corruption work, besides having to synchronize

the implementation of the above solutions, Vietnam needs to mobilize the participation of the whole political system and join hands with the mass media to perform this role.

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Section 3. Technical sciences

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COMMUNICATION AND CONSTRUCTION OF THE ALL PEOPLE'S MOVES FOR FIRE PREVENTION, FIGHTING AND RESCUE IN VIETNAM - STATUS, LESSONS LEARNED AND SOLUTIONS

Abstract. Fire prevention, fighting and rescue in Vietnam has been identified as one of the important tasks contributing to ensuring political security and social order and safety. Propaganda and awareness raising, awareness of law observance and mobilization of the entire population's strength in fire prevention, fighting and rescue is an urgent task required in the current situation. The article is based on the analysis and evaluation of the achieved results, indicating the existence, limitations and causes of those shortcomings and limitations; from there, draw lessons from experience and propose solutions to improve the effectiveness of propaganda and build a movement of all people for fire prevention, fighting and rescue in the coming time.

Keywords: Propaganda on fire prevention, fighting and rescue; the all-people movement for fire prevention, fighting and rescue; Vietnam

1. Make a problem

Propagating and building a movement of all people for fire prevention, fighting and rescue is an activity of the masses of the people, with leadership and direction in the organization and implementation. Besides, this is a basic, regular and long-term measure, having strategic significance in the work of ensuring safety in fire prevention, fighting against the requirements and tasks set out in the new situation. Therefore, over the years, the Police force for fire prevention, fighting and rescue of the Vietnam Public Security has always actively performed and successfully completed all assigned tasks; has actively and actively consulted with authorities at all levels to set guidelines, policies and solutions, step by step perfect the legal system, system of standards and techni-

cal regulations and organize relevant guidance effectively propagate and build a movement of all people on fire prevention, fighting and rescue. Thereby, the effectiveness and efficiency of state management is increasingly enhanced, creating a clear change. Measures to prevent and eliminate causes and conditions of fire, explosion, accidents and incidents are actively implemented; activities of inspection, inspection and handling of violations are promoted, strengthened and strictly implemented. The number of fires and explosions was controlled; reduce the number of large fires and explosions causing serious damage; The application of advanced and modern scientific and technological achievements in the field of fire prevention, fighting and rescue has been focused and invested in order to improve the efficiency and com-

bat power of the Police force fire prevention, fighting and rescue of the Vietnamese police.

2. Results achieved

2.1. Advantage

In the period of 2017–2022, the socio-economic development in Vietnam has grown at a relatively high rate, the process of industrialization, modernization and urbanization has taken place rapidly in most localities. Houses and constructions are more and more diverse in types and properties. The number of industrial parks, production and business establishments has increased rapidly with large production scale, operating in many fields. According to statistics, at present, the whole country has 389 industrial parks, 15.238 petrol and oil facilities, 439 hydroelectric power plants, 39 thermal power plants, 22 airports, 72 seaports, 128 inland waterway ports, 25.559 markets, supermarkets, trade centers, 30,233 apartments, high-rise buildings and hundreds of thousands of establishments under the management of fire prevention, fighting and rescue [2].

Fire situation: In 5 years (from 2017 to 2021), there were 17.055 fires in Vietnam (including 15.484 fires in houses, facilities, vehicles and 1.571 forest fires). The damage caused by the fire killed 433 people, injured 790 people, preliminary property damage was estimated at 7.043 billion VND and 7.548 hectares of forest. In addition, there were 2.769 small fire-related incidents (not subject to statistics such as short-circuiting of electrical equipment on electric poles, grass fires, garbage caused by hot sun...) [2]. Particularly in 2022, 1.741 fires occurred in Vietnam, killing 110 people, injuring 86 people, preliminary property damage was estimated at 634.077 billion VND and 1.532.69 hectares of forest [1].

In order to make a drastic change in propaganda and building a movement of all people to participate in fire prevention, fighting and rescue, the Ministry of Public Security of Vietnam has coordinated with ministries, branches, localities, domestic press agencies strengthen propaganda, renew forms and contents of propaganda, build the all-people movement

for fire prevention, fighting and rescue, specifically as follows:

- The Ministry of Public Security of Vietnam has promulgated the Project on “Renovating and improving the effectiveness of propaganda, dissemination and education of laws and knowledge and skills on fire prevention, fighting and rescue meet the requirements of the new situation”; implementation in the period 2021–2030; proposed 10 groups of tasks and solutions to profoundly innovate the contents and forms of propaganda, dissemination and education of laws and knowledge and skills on fire prevention, fighting and rescue. Currently, the Ministry of Public Security of Vietnam is implementing phase 1 of the Project (from 2021 to the end of 2025); Accordingly, 63/63 local police have been instructed to arrange 01 full-time staff to conduct propaganda on fire prevention, fighting and rescue.

- Coordinate with the Ministry of Information and Communications to direct network operators to send messages to mobile subscribers to warn and advise people on fire prevention and fighting safety. Accordingly, in the period from 2021 to 2022, 107 million messages have been sent to people’s mobile subscribers in order to raise awareness and guide skills in fire prevention, fighting rescue [2].

- Directing functional agencies to build digital conversion application software in fire prevention, fighting and rescue so that people can inform the fire prevention, firefighting and rescue Police agency rescue when incidents or accidents occur and serve the propaganda and dissemination of law, knowledge and skills. Up to now, in Vietnam, there have been 345,467 downloads and registrations to use the account “Fire Alarm 114”; the goal by the end of 2022 will mobilize 20% of the population to install the application [2].

- Cooperate with the Ministry of Education and Training in promulgating a Circular guiding the provision of knowledge and skills on fire prevention, fighting and rescue for pupils and students in educational institutions. Currently, in Vietnam, the

Ministry of Public Security is coordinating with the Ministry of Education and Training to develop and complete curricula and lectures to foster knowledge and skills in fire prevention, fighting and rescue, to put into learning programs, extracurricular activities of schools (expected to be implemented in the school year 2022–2023).

– In the period 2017–2022, the Police force for fire prevention, fighting and rescue of the Ministry of Public Security of Vietnam has coordinated with central and local press agencies to promote propaganda with many contents content and forms are rich and diverse such as organizing propaganda through social networks, organizing training classes, seminars, conferences, contests; open specialized pages and categories on the mass media; During this period, the Police force for fire prevention, fighting and rescue, the Ministry of Public Security of Vietnam coordinated with central media agencies and the locality organizes and broadcasts 88.254 news articles and articles; broadcast 788.517 reportage, documentaries on fire prevention and fighting; issued 5.123.017 banners, slogans and recommendations on fire prevention, fighting and rescue; organizing propaganda and training in fire prevention, fighting and rescue with 177.409 sessions with 9.668.141 participants [2].

– The work of replicating and developing models of movements and advanced examples in fire prevention, fighting and rescue is interested in directing the implementation, construction, development and replication of 3.964 models points, such as the model of “a cluster of enterprises for fire prevention and fighting safety and rescue and rescue”; “public firefighting point”; “inter-group of fire prevention, fighting and rescue”; “safe residential area for fire prevention, fighting and rescue” ..., 14.413 advanced typical examples of fire prevention, fighting and rescue to promote the motto “four on the spot” (forces on the spot, vehicles on the spot, command on the spot, logistics on the spot) [2].

In general, the propaganda and building of the all-people movement for fire prevention, fighting and res-

cue in the period 2017–2022 has been paid attention and implemented quite synchronously from the party committee, the government to the government basis. Thereby, initially creating a change in awareness of the heads of agencies and organizations regarding fire prevention, fighting and rescue; at the same time, helping people understand the responsibilities and regulations of the law, master the knowledge of fire prevention, fighting and rescue, thereby proactively implementing, coordinating and supporting the functional forces in the process of organizing firefighting and rescue activities when there is a fire, explosion, incident or accident.

2.2 Some exist, limited

– The work of propagating and disseminating legal knowledge on fire prevention, fighting and rescue is not regular and continuous, but only stops at major events and festivals and only focuses on propagandizing in public areas cities and townships, while remote areas have not been given due attention; funding for propaganda and training has not yet met practical requirements; slow to implement the introduction of knowledge and skills of fire prevention, fighting and rescue into educational institutions to create a foundation of knowledge and skills for incident and accident prevention for all Vietnamese citizens since the beginning of the year childhood; Not paying due attention to disseminating knowledge and understanding about prevention of fire and explosion, common incidents and accidents in daily life and production.

– The construction of typical advanced agencies, units and facilities in fire prevention, fighting and rescue is still carried out by a number of units, which is still a formality, has not gone into depth, and has not yet met the requirements of the Government requirements and objectives are met. The head of the facility has not paid attention to building and maintaining the operation of the grassroots fire prevention, fighting team, not organizing night duty and patrolling, so he cannot detect and fight fire in time, when the police force when fire prevention, fighting and rescue arrived, the fire was large, covering the entire area and difficult to extinguish.

– The research and innovation of contents, forms and measures to build the all-people movement for fire prevention, fighting and rescue in some places has not been carried out regularly. The thorough application of the four-on-the-spot motto in fire prevention, fighting and rescue has not been carried out regularly, thoroughly, and is still formal; The quality and operational efficiency of civil defense forces, grassroots and specialized fire prevention and fighting forces in some places are not high due to lack of regular attention.

– The construction and maintenance of activities of civil defense forces, grassroots and specialized fire prevention and fighting forces is still a formality and has not yet promoted its role as a core force at the grassroots to propagate, mobilize people to raise awareness and voluntarily abide by the law on fire prevention, fighting and rescue. The model of organizing civil defense teams in some places is still not suitable for socio-economic conditions, especially in ward-level areas where there is a street protection committee, and at commune level there is a communal police station, so many places do not organize a civil defense team.

2.3. Reason

– Awareness and responsibilities of some agencies, units and localities in fire prevention, fighting and rescue are not adequate, leaving the police force for fire prevention, fighting and rescue and semi-specialized forces; the head of the facility and many people are still negligent, subjective, have not fully performed their roles and responsibilities in the work of fire prevention, fighting and rescue; the coordination between agencies, units and localities in performing the tasks of fire prevention, fighting and rescue is still not close.

– Funding for investment in fire prevention, fighting and rescue activities, although carefully arranged, is still very difficult in many localities. Many localities have not been able to balance their budgets and have to depend on the central budget, so they cannot take the initiative in resources for implementation; The

heads of a number of agencies and organizations are only equipped with some rudimentary means, not being able to invest in fully equipped equipment as prescribed. The regime for the team working on fire prevention, fighting and rescue is still limited.

– Staffing of the police force for fire prevention, fighting and rescue in the locality is limited, while the workload is large. For the civil defense force, the policy is not consistent with reality, most of the team members are elderly, so the health and capacity conditions to handle fire situations in the locality and facility.

3. Some lessons learned

Firstly, the work of propagating and building a movement for all people to participate in fire prevention, fighting and rescue must be under the direct and comprehensive leadership of the Party committees and authorities at all levels. Police force for fire prevention, fighting and rescue, civil defense force, grassroots fire prevention and fighting force, specialized forces, heads of agencies, units, enterprises, schools as the core of the advisory.

Secondly, it is necessary to do well the propaganda and replication of advanced typical models, have mechanisms and policies to reward collectives and individuals with outstanding achievements in the propaganda and building of the global movement. people for fire prevention, fighting and rescue, attracting a large number of people to participate.

Third, pay attention to building and strengthening the grassroots civil defense, fire prevention and fighting forces, serving as the core for propaganda and building the movement of all people for fire prevention, fighting and rescue.

4. Solution

In order to improve the effectiveness of propaganda and build the all-people movement for fire prevention, fighting and rescue in the coming time, it is necessary to carry out a number of key contents as follows:

– Party committees, authorities at all levels, heads of organizations, production and business establishments, etc. must consider the task of fire

prevention, fighting and rescue as an important task, especially in strengthening public service inspection of the implementation of the regulations. Continue to innovate and improve the quality of propaganda and dissemination of laws and knowledge and skills on fire prevention, fighting and rescue, creating a profound change in awareness and actions of the people levels, sectors and the whole society. Continue to advise on the effective implementation of the Project “Renovating and improving the effectiveness of propaganda, dissemination and education of laws and knowledge and skills on fire prevention, fighting and rescue households to meet the requirements of the new situation”. Promote the use of digital transformation application software to serve the propagation and dissemination of law, knowledge of fire prevention, fighting and rescue.

– Continue to perform well in the role of advising the Party committees and authorities to lead and direct the construction, consolidating and improving the quality of propaganda and building the movement of all people for fire prevention, fighting and rescue, turning the movement of the entire people to participate in fire prevention, fighting and rescue into a movement of all people, contributing to well protecting state property, people’s lives and property, thereby ensuring ensure the situation of social order and safety, serving socio-economic development.

– Implement the motto “four on the spot”, establish fire prevention and fighting teams on the spot and organize training, training, sports, and contests on fire prevention, fighting and rescue for the local community this force. At the same time, review, consolidate and maintain the operation of the existing grassroots fire prevention and fighting forces and civil defense; Continue to replicate the model of building typical advanced agencies and units; fire prevention and fighting safety in neighborhoods and hamlets associated with the model of building safety agencies for security and order and safe communes for security and order. There are appropriate forms of encouragement and commendation for organiza-

tions and individuals that have made achievements in the all-people movement for fire prevention and fighting in order to launch, encourage and promote the movement of all people to participate in fire prevention, fighting and rescue.

– Each production facility, agency, unit, and each residential household must take the initiative in fire prevention, fighting and rescue, clearly identify the possible fire and explosion risks and have a plan firefighting and rescue specific. On that basis, develop and periodically practice and rehearse lessons learned to promptly supplement the limitations in the identified plans and plans. In public places such as high-rise apartment buildings, amusement parks, commercial centers, markets, etc., there must be full regulations on fire prevention and fighting safety, and instruct people on protection plans safety in the event of fire or explosion.

– Invest in physical facilities, means of fire prevention, fighting and rescue, technical infrastructure, traffic,... in service of fire prevention, fighting and rescue in accordance with regulations of law each locality, especially those where the police force for fire prevention, fighting and rescue are difficult to access... closely combine propaganda and education with strengthening and strictly handling violations of regulations fire prevention, fighting and rescue according to regulations.

– Apply information technology in managing the database on fire prevention, fighting and rescue in each locality, especially where there is a high risk of fire and explosion. Focus on preliminarily, summarizing and evaluating the results of the performance of fire prevention, fighting and rescue tasks in each period, stage, drawing lessons from experience, and providing direction and orientation in different stages next paragraph.

5. Conclusion

The application of experience and the implementation of solutions to improve the quality and effectiveness of propaganda and building a movement of all people to participate in fire prevention, fighting and

rescue is an acceptable job law enforcement, as well as educational and propaganda purposes. This is a difficult job, especially in a market economy. For propaganda and movement building to be effective and practical

for the work of national construction and defense and social security, it is necessary to have the participation of the whole political system and understanding, the voluntary participation of everyone in society.

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Section 4. Economics and management

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DEFINITION OF INTERNATIONAL LABOUR MIGRATION AND TRENDS BETWEEN EUROPE AND ASIA

Abstract. This essay provides a definition of international labour migration and an examination of the current trends between Europe and Asia. It discusses the reasons behind these migratory patterns and their impact on both the source and destination countries. Additionally, the essay provides a comprehensive analysis of the challenges and opportunities that arise from international labour migration, as well as its implications for the future of the global economy.

Keywords: labour migration, emigration, immigration, remittances, labour rights, social protection.

Labour migration refers to the movement of workers from one place to another in search of better job opportunities, wages, and living conditions. It is a phenomenon that has been taking place throughout history, as people have moved from rural areas to cities and across borders to find employment. Labour migration is driven by various factors, including economic, political, and social considerations, and can be both voluntary and forced. It has a significant impact on the economies and societies of both the origin and destination countries, affecting issues such as workforce demographics, employment, and wages, and often results in cultural exchange and integration [1].

The trend of international migration has continued to rise over the past several decades. In 2020, the estimated number of international migrants reached 281 million, a significant increase from 1990's estimated 128 million and over three times the 1970 estimate [2]. These numbers highlight the significant impact that migration has on our world and under-

score the importance of continued examination and understanding of this dynamic phenomenon.

Labour migration between Europe and Asia has been a dynamic and growing phenomenon in recent years. With the rapid economic growth and increased globalization, many workers from Asian countries have been attracted to European nations in search of higher wages and better working conditions. On the other hand, some European countries have been seeking labor from Asia to fill labor shortages in certain industries. In the past 5 years, the trend of labour migration between Europe and Asia has continued to evolve, and both positive and negative impacts have been observed. Some of the main issues surrounding labour migration between Europe and Asia in recent years include language barriers, cultural differences, discrimination, and integration into the host society. Despite these challenges, many workers have been able to establish successful careers and contribute to the economies of their host countries. As the global

economy continues to change and expand, the labour migration between Europe and Asia is expected to continue to play a crucial role in shaping the future of both regions [3; 4].

Major source countries for labour migration: from Asia to Europe include India (IT, engineering, and healthcare sectors), China (manufacturing, construction, and finance), Philippines (working as domestic helpers, caregivers, and in the healthcare sector); from Asia to Europe include United Kingdom (finance, healthcare, and education), Germany (manufacturing, engineering, and IT), Italy (agriculture, construction, and in the food and beverage sector) [3].

In Europe, the major source countries for labour migration include Poland, Romania and Bulgaria (construction, manufacturing, and in the service); migration from Europe to Asia include United Arab Emirates (finance, real estate, and tourism), Qatar (construction, engineering, and in the oil and gas sector), Singapore (finance, healthcare, and education) [3].

Factors contributing to the flow of labour migration [5; 6]:

– Economic factors: The main factor driving labour migration between Asia and Europe is economic. Workers from Asia are attracted to Europe due to higher wages and better working conditions, while European countries are seeking labor from Asia to address labor shortages in certain industries.

Demographic factors: The aging population of Europe and the increasing number of retirees has contributed to the demand for labor from Asia. Europe has a shortage of young workers, while Asia has a large pool of young and skilled workers.

Political factors: Political stability, human rights, and security are key factors that contribute to the flow of labour migration between Asia and Europe. Countries with stable political systems and better human rights records are more likely to attract workers from other regions.

Education and skill level: The education and skill level of workers is also a key factor in determining the flow of labour migration between Asia and Europe.

Skilled workers with high levels of education are in high demand in Europe, while workers with lower levels of education are more likely to work in lower-skilled jobs.

Family ties: Family ties and networks play a key role in the flow of labour migration between Asia and Europe. Many workers are motivated to move to Europe to be closer to family members or to take advantage of opportunities to support their families back home.

In 2020, Asia – with its population of over 4.6 billion people – was the source of a large portion of the world's international migrants, estimated to be around 115 million. Intraregional migration within Asia has also seen significant growth, with 69 million migrants residing within the continent, a rise from the 61 million estimated in 2015 [7].

The migration of people from Asia to Northern America and Europe has also seen a marked increase in recent years. In 2020, migration from Asia to Northern America reached 17.5 million, up from 17.3 million in 2015, while migration to Europe stood at 23 million, an increase from almost 20 million in 2015. This has driven much of the increase in the number of Asian migrants living outside of the region, totaling over 46 million extraregional migrants in 2020 [8].

On the other hand, the number of non-Asian migrants residing in Asia has remained relatively low since 1990. The largest group of migrants from outside Asia in the region are Europeans, including those from the European part of the former Soviet Union who now reside in Central Asia. Meanwhile, the number of African migrants in Asia has also grown. These numbers highlight the diverse and constantly evolving migration patterns within and from Asia [2].

In 2020, Europe saw a significant rise in international migration with nearly 87 million migrants residing in the region, an increase of 16% since 2015. Of these, over 44 million were born in Europe but lived elsewhere in the region, a number that has risen since 2015. At the same time, the population of non-European migrants in Europe reached over 40 million [9].

In 1990, there were approximately equal numbers of Europeans living outside of Europe and non-Europeans residing in Europe. However, over the past three decades, the number of Europeans living outside the continent has mostly declined and only recently returned to 1990 levels. In 2020, about 19 million Europeans were based primarily in Asia and Northern America. There has also been a gradual increase in the number of European migrants in Asia and Oceania from 2010 to 2020, as depicted in the figure [8].

The demographic profile of migrant workers in Asia and Europe varies widely, reflecting the different motivations and circumstances that drive migration. Some common factors that shape the profile of migrant workers in both regions include [8; 10; 11]:

- Age: Migrant workers in Asia and Europe tend to be young, with a large proportion being in their 20 s and 30 s;
- Gender: Women are increasingly represented among migrant workers, particularly in healthcare, domestic work, and other care-related occupations;
- Education: The level of education of migrant workers varies widely, with some highly educated professionals, such as engineers and doctors, working in certain industries, and others with limited education working in low-skilled occupations;
- Skill level: Migrant workers can range from highly skilled professionals to low-skilled workers, with varying levels of expertise and training;
- Occupation: Migrant workers in Asia and Europe work in a range of occupations, including construction, manufacturing, agriculture, and service industries;
- Country of origin: Migrants come from a variety of countries, with some originating from within the region and others from further afield;
- Length of stay: people can be short-term or long-term, with some returning home after

a period of time and others settling permanently in the host country.

Europe and Asia have engaged in various collaborative efforts to manage migration flows between their regions. European and Asian countries have signed bilateral agreements to regulate migration, including agreements on the recruitment and protection of migrant workers, and the establishment of joint mechanisms to address related social and economic issues.

Also continents have established joint initiatives and programs aimed at managing migration and promoting the integration of migrants into the host society, such as language classes, cultural integration programs, and employment programs. Regional organizations, such as the European Union (EU) and the Association of Southeast Asian Nations (ASEAN), have established cooperation frameworks aimed at promoting cross-border migration and addressing related social and economic issues. Europe and Asia have collaborated on the exchange of information and research on migration, aimed at understanding the causes and consequences of migration and identifying effective policy responses.

Civil society organizations have played an important role in supporting migrant workers in Europe and Asia. They have provided legal aid and advocacy services for migrant workers, aimed at protecting their rights and improving their working conditions. Organizations have established programs to support the health and welfare of migrant workers, including access to healthcare, education, and housing. They have engaged in awareness-raising and education campaigns aimed at promoting understanding and tolerance of migrants and addressing prejudice and discrimination.

The future outlook of labour migration between Asia and Europe will depend on a number of factors, including economic conditions, demographic trends, and government policies. The demand for migrant workers will continue to be driven by the economic needs of both Asia and Europe, with sectors such as

construction, manufacturing, and care work expected to remain key sources of employment for migrants. The aging populations of Europe and the rapidly developing economies of Asia will likely continue to create demand for migrant workers to fill shortages in the labor market. The policies and programs of governments in both Asia and Europe will play a critical role in shaping the future outlook of labour migration, with a focus on improving the rights and working conditions of migrant workers, and promoting the integration of migrants into the host society. The impact of technological change, such as automation and artificial intelligence, will likely have important implications for the future of labour migration, potentially reducing the demand for low-skilled workers while increasing the demand for high-skilled workers. The political climate and public opinion towards immigration will continue to be important factors affecting the future outlook of labour migration, with ongoing debates and discussions around the benefits and costs of immigration expected to shape government policies and public opinion [12; 13].

Labour migration between Europe and Asia is a complex and multifaceted phenomenon that poses both challenges and opportunities for both regions. Addressing these challenges and opportunities is critical to promoting the rights and well-being of migrant workers, and to ensuring the social and economic benefits of migration are realized. The importance of promoting the rights and working conditions of migrant workers, through the implementation of effective policies and programs aimed at improving their access to healthcare, education, and housing, and protecting their rights and safety in the workplace. The importance of promoting the integration of migrants into the host society, through the development of community building initiatives and education and awareness-raising campaigns, and the provision of legal aid and advocacy services. The importance of engaging in informed and evidence-based policy development and research, to ensure that the social and economic impacts of migration are understood and addressed, and that effective policies are developed to manage migration and promote the rights and well-being of migrant workers.

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GOVERNMENT PROGRAM 2021–2024 “FOR THE CONSTRUCTION OF THE EUROPEAN STATE” AND THE ROLE OF INTELLECTUAL PROPERTY AND INNOVATIONS IN THE ECONOMIC DEVELOPMENT OF THE COUNTRY

Abstract. In December 2020, Georgia adopted the government program 2021–2024 “for the construction of a European state”. In accordance with the main vision of the program, the construction of the state of Georgia is based on the main democratic principles and values. It serves the full integration of Georgia in the European and Euro-Atlantic space.

The topic of economic development occupies a special place in the program. However, it hardly mentions the importance and impact of intellectual property and innovation in these processes, which is clearly a shortcoming.

Keywords: Intellectual Property, Innovation, Government Program, Economic Development, European Integration.

In 2021–2024, the efforts of the Government of Georgia will be directed to the following four key areas: 1) foreign policy, security, conflict resolution and human rights; 2) economic development; 3) social policy and human capital development; 4) State governance [1].

I would like to note that, unlike the 2018–2020 government program, in the key directions part of the current document, there regrettably is no mention at all of the intellectual property and innovations [2].

In particular, in the 1st direction concerning Georgia’s being on the path of European and Euro-Atlantic integration, the component of full-fledged integration into the European Union is given a special importance. It is noted that the country will activate the individual directions of the integration agenda which are given in the EU integration road map. In terms of the effective implementation of the Association Agreement and in accordance with the component of the deep and comprehensive free trade space, it is particularly important to continue work towards the integration into the European single market.

I believe that the full implementation of the above-mentioned documents will be impossible without protection of the intellectual property and innovations that ensure the success of both foreign policy and security as well as economic development directions. In addition, when the government document speaks about the necessity of deepening cooperation with the EU in the fields of security and defense, sectorial integration, involvement in EU programs and cooperation with specialized agencies, it is clear that the emphasis must be made on the intellectual property objects and in particular on the role which will be assigned to intangible assets and innovations within the above-mentioned cooperation, as well as in identifying new opportunities within the framework of the “Eastern Partnership” (EaP) and in components that ensure the provision and effective implementation of these opportunities [3].

Chapter 2 of the government program on “Economic Development” states that the country’s economic policy is aimed at maintaining stability and further development of the business and investment environment. The program is based on free market

principles where the private sector is the main driver of the economy.

As it is stated in the government program, the goal of the economic policy will be to maximize the use of new opportunities for the further development of the country. In my opinion, both the growth of domestic investments and the attraction of foreign investments may be to some extent related to the process of creation and development of new innovative enterprises in Georgia, integration of these enterprises in the alliances of foreign enterprises and ensuring production of patent-protected products that enjoy demand.

It is obvious that this will necessarily require the structural transformation of the economy as well as the maximum involvement of the economic factors, and what is also important, inclusion of the state-owned resources into economic activity. I think that in this regard we should first of all use the intangible assets that owned by enterprises – patents, licenses, other relevant technological improvements and bring them up to the condition so that they can be taken to the EU market by 2024.

According to sub-chapter 2.1 of the document, the framework of the economic policy provides for the exit from the crisis and rapid economic development.

It should be noted that due to the global nature of the crisis, the situation on the export markets has significantly worsened as a result of which the volume of exports from Georgia has accordingly decreased. In this situation, it is important to: improve the regional and international competitiveness of the country; support competitive local production and export; promote the investments. In my opinion, competitiveness can be improved through the active use of intangible assets since as the international practice shows, the investor tries to invest resources into profitable, promising productions, the technologies of which are protected by a patent packages. Similarly, export-oriented products can be promoted only in the case when the globally innovative and patently clean new product, protected by relevant

protective documents, is placed on the market. In the post-pandemic period, there will obviously take place the fiscal consolidation and cost optimization processes.

What concerns the requirement that the selection will be made based on the high degree of economic effectiveness of the product and the fact that the financing will be carried out through the wide implementation of the public investment management (Product information management, PIM) tool (by 2024, 100% of the investment projects implemented from the budget will be covered by this tool), it is apparent that to ensure this provision, enterprises will have to move to a qualitatively new level of technology, which, I think, is impossible without the creation of intellectual property products and their legal protection as well as the establishment of tax benefits and the improvement of the administering system [4].

As practice shows, state funds are used relatively less efficiently within the framework of the implemented state programs. This is confirmed by the analysis and evaluation of the results of mass bankruptcy and liquidation of state enterprises which was conducted for the purpose of determining their effectiveness.

In my opinion, during implementation of a large-scale reform of state enterprises, when making strict prioritization of capital projects to determine the most optimal volume of capital investments, in order to ensure the effective management of public finances, there should be conducted a new process of inventory of intangible assets and if they are identified, to add them to the organization's assets. Also it should be analyzed as how much were justified the facts of non-use or only partial use of the intellectual property objects attached to the enterprise, as well as the facts of premature refusal of the patent and non-payment of the annual state duty. The above is also important when planning the investment policy all over again, which should be based on an aggressive campaign model and concern both the attraction of regional offices of international companies and the encouragement of investments in the real sector of production. The same

applies to the further improvement of sovereign ratings to enable the achievement of an investment grade credit rating (BBB-/Baa3) [5].

Conclusions:

1. The government program 2021–2024 for “building a European state” hardly mentions the importance of intellectual property and innovation, which is clearly a shortcoming.

2. In terms of the effective implementation of the Association Agreement, it will be particularly important to continue working towards integration into the European single market, according to the component of the deep and comprehensive free trade space. The full implementation of the mentioned documents is impossible without intellectual property and innovations, which define and ensure the directions of economic development and their success.

3. When engaging in sectorial integration and EU programs and cooperating with specialized agencies, attention must be definitely focused on intellectual property objects, on the role that will be assigned to intangible assets and innovations within the above-mentioned cooperation, as well as in the framework of the “Eastern Partnership” (EaP) in finding new opportunities and within the components that ensure their provision and effective implementation.

4. The growth of domestic investments and attraction of foreign investments are to some extent connected with the process of creation and development of new, innovative enterprises in Georgia, as well as their integration in the alliances of foreign enterprises and ensuring the production of a patent-protected products that enjoy demand. In this regard it is necessary to maximize the inclusion of state-owned resources into economic activity. First of all, we should use the intangible assets owned by the enterprises – patents, licenses and other relevant technological improvements and bring them up to the condition that will enable to take them to the EU market by 2024.

5. The framework of the economic policy provides for the exit from the crisis and rapid economic

development. Due to the global nature of the crisis, the situation on the export markets has significantly worsened and exports from Georgia have decreased. Competitiveness can be improved based on the active use of intangible assets. The investor tries to invest resources in profitable, prospective productions, the technologies of which are protected by a package of patents. In addition, export-oriented products can be promoted only if the products that are present on the market are globally innovative and patently clean new products, protected by relevant protective documents.

6. In the post-pandemic period, the process of fiscal consolidation and cost optimization will take place. The selection will be based on products providing for high economic impact and the financing will be carried out through the widespread implementation of the public investment management (Product information management, PIM) tool. To ensure this, enterprises will have to move to a qualitatively new level of technology, which is impossible without creating intellectual property products, ensuring their legal protection, establishing tax benefits, and improving the administration system.

7. Within the framework of the implemented state programs, state finances are used with relatively less efficiently, which is evidenced by the fact of mass bankruptcy and liquidation of state enterprises.

During implementation of a large-scale reform of state enterprises, to determine the most optimal volume of capital investments when making strict prioritization of capital projects to determine the most optimal volume of capital investments, in order to ensure the effective management of public finances, there should be conducted a new process of inventory of intangible assets and if they are identified, to add them to the organization’s assets.

8. During the implementation of the large-scale reform of the state enterprises, it should be analyzed as to what extent were justified the facts of the non-use (or only partial use) of the intellectual property objects attached to the enterprise, as well as the facts

of early refusal of the patent and the non-payment of the annual state duty. The above is also important when planning the investment policy all over again, which should be based on an aggressive campaign model and will concern the attraction of regional

offices of international companies and the encouragement of investments in the real sector of production. A further improvement in sovereign ratings is required to enable the achievement of an investment grade credit rating (BBB-/Baa3).

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