Initial Environmental Examination

Project number: 51041-002
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Draft

UZB: Horticulture Value Chain Infrastructure Project Andijan Agro-Logistic Center

Prepared by the Rural Reconstruction Agency (RRA), Republic of Uzbekistan for the Asian Development Bank (ADB).

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LIST OF ABBREVIATIONS

ADB	-	Asian Development Bank
ALC	-	Agro-logistic center
ECC	-	education and communication campaign
EHS	-	environmental, health, and safety
EIA	-	environment impact assessment
EMP	-	environmental management plan
EMR	-	environmental monitoring report
EO	-	environmental officer
ES	-	environmental specialist
GDP	-	gross domestic product
GRM	-	grievance redress mechanism
HTC	-	hydrothermal coefficient
ICWC	-	Interstate Commission for Water Coordination
IEE	-	initial environmental examination
IFC	-	International Finance Institute
LARP	-	land acquisition resettlement plan
MAC	-	maximum allowable concentrations
MAD	-	maximum allowed discharges
MAWR	-	Ministry of Agriculture and Water Resources
MoH	-	Ministry of Health
MFT	-	Ministry of Foregin Trade
OHS Plan	-	occupational health and safety plan
PC	-	public consultation
PCB	-	polychlorinated biphenyl
PMC	-	project management consultant
PMO	-	project management organization
PPE	-	personal protection equipment
PSC	-	project management and supervision consultant
RCA	-	rural citizen Assembly
RCM	-	Resolution of Cabinet of Ministry
RRA	-	Rural Reconstruction Agency
RUz	-	Republic of Uzbekistan
SCEEP	-	State Committee on Ecology and Environment Protection
SEE	-	State Environment Expertise
SEMP	-	site environmental management plans
SNR	-	sanitarian norms and rules
SPS	-	Safeguards Policy Statement
SSEMP	-	site-specific environmental management plans
STD	-	sexually communicable diseases
SWMP	-	special waste management plan
UHF	-	Uzbek Food Holding
US	-	United State
UZB	-	Uzbekistan

GLOSSARY

Glavgosexpertisa	State Department responsible for Conducting Environmental Expertise Under SNPC
Khokim	Governor of administrative unit
Khokimiyat	Regional government authority
KMK	National acronym for Construction norms and regulations
Makhalla	A community of neighbors, which is based on full independence and self-governance.
OVOS	National acronym for EIA assessment process
PZVOS	National acronym for Concept Statement on Environmental Impact
SanR&N	Sanitary - epidemiological norms and regulations
Som	Local currency
SNiP	Set of basic regulatory requirements and regulations governing the design and construction in all sectors of national economy of Uzbekistan
Uzbekenergo	Managerial body in the electric power and coal industries, which are major structural components of the national economy
Uzhydromet	State governing body specially authorized for the solution of tasks in the field of hydrometeorology in the Republic of Uzbekistan and in its activities, it is accountable to Cabinet of Ministers
ZVOS	National acronym for Statement on Environmental impact
ZEP	National acronym for Statement on Environmental Consequences

NOTE

In this report, "$" refers to US dollars.

EXECUTIVE SUMMARY

The proposed project will finance the establishment of agro-logistics centers (ALCs), initially for horticulture, in two provinces - Andijan and Samarqand - taking into account international best

practices. Such infrastructure will provide all necessary facilities and services under one roof: storage, auction, food safety certification, customs clearance, quarantine, transport, shipping, expert market advice, trade finance and commercial banking etc. Significantly larger volumes of products with improved quality could be marketed with better post-harvest logistics, notably cold storage and transport integrated with quality and safety standard certification, customs clearance, and quarantine provided through wholesale and export processing facilities in the vicinity of production areas.

Two agro-logistic centers (ALC) will be constructed in Samarqand and Andijan provinces of Uzbekistan. The construction will be implemented in two phases. During the first stage post harvest buildings, cold storage, two wholesale markets for small farmers and customs, added value activities building, administrative building will be constructed. Wholesale markets for medium and large wholesalers, brokers and exporters, meat and dairy products pavilion and upgrading of post harvest buildings / train terminal will be constructed on during the second stage. The project implementation period is 5 years (2018–2023).

The Rural Reconstruction Agency (RRA) will be the Executing Agency. Both the RRA and the Ministry of Foreigh Trade (MFT) will be the project implementing agencies. A project management office (PMO) will be established under RRA with its current staff and relevant personnel assigned from the Ministry of Foregin Trade (MFT) (if and when required). The MFT will establish and finance its own implementation/management team/entity to coordinate the implementation and subsequently to be in charge of operation of the ALCs. A project management and supervision (PSC) consulting firm will be recruited to assist the project implementation and supervision.

Categorization of reviewed project in accordance with ADB SPS (2009) was done based on REA. It was defined that the project belongs to category B, as a project with site-specific impacts, few of which are irreversible, and where in most cases mitigation measures can be designed. The project requires an initial environmental examination (IEE), which will be based on data from the feasibility study, preliminary design, site visits and interviews with technical experts, as well as primary and secondary data including the feedback received during the public disclosure process.

As per national legislation the project belongs to Category 3 with respect to its environmental impact (low impact risk). Prior to commencing the construction such project requires the conduction of the Environmental Impact Assessment and Environmental Appraisal by the State Committee for Ecology and Environment Protection at the provincial level.

To comply with national environmental legislation, a number of permissions need to be obtained before commissioning the construction works and ALC operation. The list of necessary documents includes permission/license: for using existing borrow pits or opening new ones, for cutting trees, for temporary use of ground water for drinking purposes, for disposal of solid wastes and sewage during the construction period and etc.

An agro-logistic center (ALC) will be built in Andijan district of Andijan province (Figure 1). The ALC will occupy 57 ha of agriculture land which will be acquired for the project in accordance with relevant national and ADB requirements.

The site plots borders with the highway connecting the Andijan city (central city of the Andijan province) and Asaka - second largest city in the province. The railway line Andijan-Fergana-Tashkent is located on the north-west of the site. There is small administrative building on the south west part of the plots.

Based on information provided by Andijan meteostation (Uzhydromet) air quality on NO_2, SO_2 complies with national standards. Baseline data showed exceeding of dust level concentration standards. The main source of dust pollution is cement factory located on the south-west from the project site. Representative of province level hokimiyat ensured that this factory will be dismantled and moved to another non-populated area.

Analysis of water quality from drainage canals flowing next to the project site showed exceeding standards for irrigation and drinking water quality. There are no any rare or endemic species of flora and fauna on the project site, since the agricultural field has been cultivated for a long period of time. For trees growing along the fields and roads the appropriated compensations will be paid to the owner or State Committee for Ecology and Environment protection in accordance with national legislation.

The closest natural protected area – ground water deposit is located more than 30 km away from the project site. There are no historical or cultural heritages within the project area. Nevertheless, in case of chance of finding such heritages during the construction works the appropriate mitigation measures are included in environmental management plan.

Anticipated impacts were accessed for three stages of the project implementation – pre-construction, construction and operation phases. For the pre-construction phase requirements for including environmental clauses and EMP in bidding documents, specific location of waste water treatment and waste management are in the project layout, requirements on compliance with ADB Prohibited Investment Activities List and national legislation and development Site specific environmental management plans and other plans were included in the EMP.

For the construction phase main impacts will be dust and waste generation. Certain amount of surplus soil will be generated during earth works, digging foundation for building and etc. It is proposed to use a topsoil for re-vegetation as much as possible during landscaping after completion of the construction works. The rest of removed topsoil could be distributed among local farmers and households. The excavated soil, as well as all types of wastes have to be disposed in the area indicated by local agency State Committee for Ecology and Environmental Committee “Toza hudud”.

Calculation of anticipated noise and vibration level during the construction phase showed that noise level generated by machinery will not exceed standards for living area and educational standards. Nevertheless, proposed environmental monitoring program includes continuously monitoring of noise level and to recommend undertaking additional mitigation measures in case of exceeding baseline measurements standards.

Impact on surface and ground water quality during the construction phase will be mitigated through setting up necessary measures such as organizing sanitation arrangements for construction camps and vehicles washing area, storage of excavated soils and hazardous materials.

Based on site assessment, 120 juniper trees could be felled for construction purposes. Compensation for trees was calculated in accordance with national legislation and included in the cost estimation for Environmental Monitoring Plan.

During operation phase the main impact will be increasing traffic and waste management. Comparison of anticipated and existing noise levels from the highway Andijan-Asaka-Fergana showed, that the noise will not increase more than on 3 dB during the day and night time.

The project implementation will have significant positive impact on socio-economic resources through creating new job opportunities, improvement of market for farmers and general income in Andijan province economy.

Environmental Management and Monitoring plans provide detail description of mitigation measures and responsible parties for their implementation. A separate table shows cost estimates for EMP implementation. The EMP's cost was discussed with PPTA engineers and financial experts.

The PMO at RRA will be responsible for implementation of EMP to comply with ADB's safeguards requirements and environmental national regulations. For this, PMO will hire a qualified full-time Environmental Specialist who will be guided by an International Environmental Specialist (IES) of the Project Supervision Consultant (PSC) in overseeing the implementation of EMP.

Around 65 representatives from RCA "Teraktagi", Andijan districts level committee on Ecology and Environment Protection, district Khokimiyats and makhallas, land cadaster committee, district water supply agency (Suvoqova) participated in public consultations conducted on March 16, 2018. All concerns raised by public consultation participants were reflected in this IEE.

The GRM for the current project takes into account the national legislation, the specificity of the project sites and results of public consultations. The GRM discussion was held with implementation agencies – RRA, PPTA Resettlement team and it was updated into the format applicable for both aspects – environmental and social in terms of environmental impact and mitigation measures.

The proposed mechanism includes three level of complaints redressing received from affected persons, which starts from project site level and up to Economic court of RUz. The aggrieved persons can also use the ADB Accountability Mechanism (AM) through the direct citizens' application to the Head Quarter in Manila.

Based on conducted initial environmental examination it could be stated that during the construction and operation of proposed project, site-specific environmental impacts may occur in each of these project sites during the construction phase. The impacts could be mitigated by implementation of proposed mitigation measures which are included and will be implemented through environmental management plans.

1. INTRODUCTION

1. Agricultural gross domestic product (GDP) in the Republic of Uzbekistan (Uzbekistan) grew at an annual average rate of 9.8% over the period 2010–2015. During 2005–2015, with the agriculture sector, horticulture has witnessed dramatic change and increased importance to the economy. Production areas have increased significantly (vegetable by 41%, melons (and watermelons) by 53%; fruits and berries by 28%). The Government of Uzbekistan aims to enhance the horticulture value chain to increase export of horticulture products.

2. Although it is expected to continue to grow, agriculture is characterized by low productivity and remains labor intensive. The horticulture sector is constrained by limited access to quality land, specialized machinery, storage facilities, appropriate inputs, and long-term finance. The country's market infrastructures are old and fragmental, and lacks modern and integrated wholesale market facilities, which include post-harvest handling, certification, storages, and logistic services in one place, to promote export of horticulture products with international standards for hygiene, quality, and safety. These, among others, have led to unrealized potential for horticulture production and marketing of products in both internal and external markets.

3. The traditional market for Uzbek horticulture produces has been the Russian Federation, which accounts for 80% of Uzbekistan's exports and yet these imports only account for 3%–4% of all fruit and vegetable imported into the Russian Federation. Uzbek exports could expand significantly by capturing a larger share of the Russian Federation market, and beyond this market, there is also scope for Uzbek horticulture exports to European markets.

4. However, accessing European, especially the European Union, markets will require improvement in horticulture quality and safety standards and certification systems. In this context, there is considerable scope to improve storage, processing, and marketing technologies. Post-harvest losses were estimated to be up to 45%, and that existing cold storage was only able to store approximately 1.0 million tons or just 5.7% of the total horticulture output in 2015. The potential of a growing and more sophisticated consumer demand for both fresh and processed products in domestic and export markets is not being realized due to these constraints.

5. The government aims to take more steps to increase agriculture production. Measures include (i) further structural reforms in agriculture and diversification of agricultural production; (ii) mechanization of agriculture, improvement of infrastructure, and development of agribusiness; (iii) more productive use of land and water; (iv) greater financial stability of farm entities; and (v) more market-oriented agricultural policies.

6. The proposed project will finance the establishment of agro-logistics centers (ALCs), initially for horticulture, in two provinces - Andijan and Samarqand - taking into account international best practices. Such infrastructure will provide all necessary facilities and services under one roof: storage, auction, food safety certification, customs clearance, quarantine, transport, shipping, expert market advice, trade finance and commercial banking etc. Significantly larger volumes of products with improved quality could be marketed with better post-harvest logistics, notably cold storage and transport integrated with quality and safety standard certification, customs clearance, and quarantine provided through wholesale and export processing facilities in the vicinity of production areas.

7. The ALCs will help expand horticulture export and thus promote better linkages with production, post-harvest processing, and handling following international quality, and safety

standards. Increased export and domestic marketing of horticultural products will increase price transmission to small-scale producers, and small- and medium-sized agribusinesses. It will also help increase diversification of the agriculture sector from cotton to horticulture as it has more financial, economic, and less social and environmental concerns than cotton in the medium and long term.

8. The government has requested a concessional loan of $197 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years; an interest rate of 2% per year during the grace period and thereafter; and such other terms and conditions set forth in the draft loan and project agreements.

9. The project will have two outputs: (i) agro-logistic centers established; and (ii) capacity to manage the agro-logistic centers enhanced. These outputs will result in the following outcome: export and domestic marketing of horticulture produce increased. The project will be aligned with the following impact: improved contribution of horticulture sector to inclusive economic growth.

10. This Initial Environmental Examinational was conducted for the ALC which will constructed in Andijan district of Andijan province.

2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK AND STANDARDS

11. This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

2.1. Institutional set up of agriculture and environmental sectors

2.1.1. Institutional set up of agriculture sector

12. This section provides brief information on institutions responsible for agriculture sector management and which are involved in this process.

13. Initially, at the beginning of this IEE preparation the Ministry of Agriculture and Water Resources (MAWR) of the Republic of Uzbekistan was agency responsible for coordination in the field of agriculture, water and forestry, resolves tasks and assigned to it directly, and through its subordinate republican and territorial bodies. In accordance with the Resolution of President of RUz # 5330 dated from February 12, 2018 the MAWR was split in two ministries – Ministry of Agriculture and Ministry of Water Resources. At the stage of this IEE preparation new resolution on functioning both ministries were under development. Considering of the nature of this project, it is obvious that some of the previous tasks of MAWR on agricultural aspects will be transferred to the new Ministry of Agriculture.

14. The tasks of the previous MAWR in the term of agriculture were:

- the implementation of a unified agrotechnical policy aimed at the modernization and sustainable development of agriculture;
- improvement and introduction of modern agricultural technologies in the field of agricultural production;
- coordination of activities of industries, parts and structures that serve agricultural producers based on market principles and mechanisms;
- coordination of works on deepening economic reforms in the agricultural sector,

broad development of lease relations, family contracting, farming;
- development of recommendations for improving the system of agricultural management and crop varieties.

15. The Rural Reconstruction Agency (RRA) which was constituted under the Ministry of Agriculture and Water Resources (MAWR) pursuant Decree of Cabinet of Ministers (DCM) No. 462,[1] concomitantly with the implementation of the IBRD supported "Rural Enterprise Support Project".

16. The RRA is headed by a General Director and has a staff of 80 of which 57 are management, technical, engineering, finance, economist staff. Two deputy directors are in charge of: i) Implementation of Investment projects and ii) development of new projects. Within the Agency a Marketing Research department is specifically in charge of promoting marketing and the export of horticulture goods.

17. To date of this IEE preparation RRA has completed 6 agricultural infrastructure and agriculture enterprises support project. Currently RRA is implementing another 7 projects in the areas of sustainable agriculture, horticulture chain development, livestock and adaptation to climate change.

18. **Hokimiyats** – The Cabinet of Ministers is established in each city of the country to fulfill the social and economic tasks of the city's spiritual development, the laws of the Republic of Uzbekistan, the resolutions of the Oliy Majlis[2] of the Republic of Uzbekistan, the President of and the Cabinet of Ministers, to establish links between the government and self-government bodies and the welfare of the population. The order of work of the governing body of the city hokimiyat and its structural subdivisions is determined by the procedure established by the hokim[3] of the city.

19. The "**Uzbekozikovkatholding"** holding joint-stock company **(UFC)** was instituted with Decree of the President of the Republic of Uzbekistan No. PP-24924 as replacement of the former Association of Food Industry Enterprises. Uzbekozikovkatholding includes a roster of 241 enterprises processing horticulture products, 45 enterprises processing meat and milk products, 79 enterprises processing other food products and 13 service companies.

20. The "**Ministry for Foreign Trade"** of the Republic of Uzbekistan (MFT) was instituted with Decree of the President of the Republic of Uzbekistan No. UP-5012 13 April 2017 as replacement of the former Ministry of Foreign Economic Relations, Investments and Trade. The MFT includes a roster of 4 sub-entities: (i) JSC "Uztrade", (ii) JSC "Uzsanoatexport", JSC (iii)"Urta Osie Trans" and JSC (iv) "Uzbekexpertiza".

2.1.2. Institutional set up of environmental protection

[1] Resolution of the Cabinet of Ministers No. 462 of 2 October 1997: "On measures to accelerate implementation of the Rural Enterprise Support Project financed with a loan of the IBRD.

[2] *The Supreme Assembly.*

[3] *Mayor of the city.*

[4] Presidential Decree No. PP-2492[4] of February 18, 2016 "*On measures to further improve the organization of the food industry of the republic" on the basis of the proposal of the Ministry of Economy, the State Committee of the Republic of Uzbekistan on privatization, Association of Food Industry Enterprises was abolished and the holding company "Uzbekozikovkatholding."*

20. New steps to reforms of some Government institutions took place in 2017. Thus, the previous State Nature Protection Committee was established as a specially designated above-departmental and coordination body that implemented state supervision and inter-branch management in terms of nature protection, and usage and recreation of natural resources.

21. Based on the RUz President Resolution No. 5024 'On Improving the System of State Management in the sphere of Ecology and Environmental Protection' of 21th April 2017, the State Committee for Nature Protection was reorganized into the State Committee for Ecology and Environmental protection. The newly organized Committee is designated to improve the state management in the sphere of environmental safety and environmental protection within the country, improve the environmental situation, prevent the harmful impact of wastes on the health of citizens, create favorable conditions for improving the level and quality of population's life, further improve the collection, storage, transportation system, utilization, treatment and disposal of domestic wastes[5].

22. The Resolution No. 5024 highlights some changes in the institutional set up of the Committee which includes re-naming the provincial committees into departments and organizing a new department within the central body of Committee and its provincial branches – Inspectorate for Control of Wastes Generation, Collection, Transportation, Utilization, Treatment, Disposal and Sales. The Resolution also states about establishment of unitary enterprises named 'TozaHudud' (clean area) under the Committee of the Republic of Karakalpakstan and provincial departments, which will be based at the sites of providing services on transportation of domestic wastes under the district administration.

23. The Existing 'Republican Inspectorate for Protection of Wild Animals and Plants and their Rational Usage' has been reformed into 'Inspectorate for Control of Biodiversity Protection and its Usage, and Protected Natural Areas' under the State Committee for Ecology and Environmental Protection.

24. The newly organized State Committee for Ecology and Environmental Protection (Goskompriroda) is the primary environmental regulator, which reports directly to the Cabinet of Ministries of the Republic of Uzbekistan.

25. The structure of Goskompriroda takes the form of a central body in Tashkent with regional branches and agencies providing scientific and technical support. Regional environmental authorities are structured similarly to the Goskompriroda.

26. At the moment of preparation hereof, the final structure of Goskompriroda was under revision and finalization.

27. Other state bodies of the Republic of Uzbekistan dealing with environment-related issues are:

- State Committee for Geology and Mineral Resources (or Goskomgeologia);
- Centre of Hydro-meteorological Service (or Uzhydromet);
- Ministry of Health (or MoH RUz);
- State Inspectorate for Exploration Supervision, Operations Safety Supervision of Industry, Mining and Utilities Sector (or Sanoatgeokontekhnazorat).

[5] RoUz President Resolution No. 5024 'On Improving the System of State Management in the sphere of Ecology and Environmental Protection' of 21th April 2017.

28. Former **Ministry of Agriculture and Water Resources**[6] was responsible for water allocation among different users within Republic of Uzbekistan. Based on forecast and limits provided by Interstate Commission for Water Coordination (ICWC), water is allocated among users with the priority given to drinking water supply sector[7]. Currently new resolution on functioning both ministries were under development, and it is anticipated that responsibilities of the former MAWR in part of water management will be transferred to new Ministry of Water of RUz.

29. **The State Committee for Geology and Mineral Resources:** (i) carries out, together with Geological Survey Services of the neighboring countries, work on identifying and studying the focal points of radioactive and toxic pollution within transboundary territories, prepare geological maps and atlases reflecting specially hazardous zones and sections; (ii) in accordance with the procedure established by legislation, exercises control over protection of geological and mineralogical facilities as well as underground water from pollution and depletion.

30. **Uzhydromet** establishes and maintains the State Hydrometeorological Fund of Data, the State Fund of data on environment pollution, state accounting of surface waters; systematic observations of air, soil, surface water, as well as formation and development of disastrous hydrometeorological phenomena.

31. **The Ministry of Health of RUz** – develops and approves sanitary regulations, rules, and hygienic standards, carries out state sanitary supervision over their observance as well as methodological supervision of the work of sanitary and epidemiological services, regardless of their departmental subordination.

32. **Sanoatgeokontekhnazorat** (State Inspectorate for Supervision of Subsurface Resources Geological Investigation, Safe Work in Industry, Mining, Utilities and Household Sector) – works together with the State Committee for Ecology and Environment protection of the Republic of Uzbekistan and carries out control in the field of geological investigation, use and protection of subsurface resources.

33. **Uzstandards** – are local standards which are adopted for standardization, metrology and certification of products and services in Uzbekistan in 1993. On the territory of Uzbekistan, these standards are applied mandatory for. The Uzbek Agency for Standardization, Metrology and Certification (Uzstandard Agency) is the national body of the Republic of Uzbekistan on standardization, metrology, certification and quality management.

2.2. Policy and Legal Framework

2.2.1. ADB Safeguards Policy

34. Environmental and social safeguards are a cornerstone of ADB's support to inclusive economic growth and environmental sustainable growth. ADB Safeguards Statement Policy (SPS) adopted in 2009 governs the environmental and social safeguards of ADB's operations. The objectives of the SPS are to avoid, or when avoidance is not possible, to minimize and mitigate adverse project impacts on the environment and affected people, and to help borrowers

[6] In accordance with Resolution of President of RUz # 5330 dated from February 12, 2018 the MAWR was split in two ministries – Ministry of Agriculture and Ministry of Water Resources.
[7] Law of RUz "On water and water use" (1993), chapter 8, para 25.

strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

35. SPS builds upon the three previous safeguard policies on the environment, involuntary resettlement, and indigenous peoples, and brings them into a consolidated policy framework that enhances effectiveness and relevance. The SPS applies to all ADB-supported projects. ADB works with borrowers to put policy principles and requirements into practice through project review and supervision, and capacity development support. The SPS also provides a platform for participation by affected people and other stakeholders in project design and implementation.[8]

36. The objectives of ADB's safeguards are to:

(i) avoid adverse impacts of projects on the environment and affected people, where possible;
(ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and
(iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

37. ADB will not finance projects that do not comply with its safeguard policy statement, nor will it finance projects that do not comply with the host country's social and environmental laws and regulations, including those laws implementing host country obligations under international law.

38. Based on preliminary review projects are assigned to one of the following four categories:

Category A. A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.
Category B. A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
Category C. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

39. ADB pays special attention to processes of information disclosure, and consultations and participation during the project preparation and implementation phases. ADB publishes final or updated environmental impact assessments and/or initial environmental examinations on its own website. ADB is committed to working with borrowers/clients to put meaningful consultation processes into practice. Consultations process with communities, groups, affected people starts at the earliest stages of the project preparation and continues through all process of environmental assessment.

[8] htTN://www.adb.org/site/safeguards/overview

40. ADB requires that the borrower/client establish and maintain a grievance redress mechanism to receive and facilitate resolution of affected peoples' concerns and grievances about the borrower's/client's social and environmental performance at project level.

41. Categorization of reviewed project was done based on REA. It was defined that the Project belongs to category B, as a project with site-specific impacts, few of which are irreversible, and where in most cases mitigation measures can be designed. The Project requires an initial environmental examination (IEE), which will be based on data from the feasibility study, preliminary design, site visits and interviews with technical experts, as well as primary and secondary data including thus the feedback received during the public disclosure process.

2.2.2. National Environmental Regulatory Framework

42. RUz has developed over 100 laws and regulations, and revised old Soviet legislation and policies. One of the country's objectives is the transition to sustainable social and economic development. For this purpose, RUz has revised and improved the national environmental legislation, enacted new environmental laws and regulations, developed programs and action plans to address environmental issues and promoted sustainable use of natural resources.

43. A legal framework in the field of nature protection and management established in RUz, provides to the citizens the rights and duties specified in the country's Constitution. Specific articles that address environment protection issues within the Constitution are:

- Article 50. All citizens shall protect the environment
- Article 51. All citizens shall be obliged to pay taxes and local fees established by law
- Article 54. Any property shall not inflict harm to the environment
- Article 55. Land, subsoil, flora, fauna, and other natural resources are protected by the state and considered as resources of national wealth subject to sustainable use.

44. Uzbekistan has enacted several supporting laws and statutes for environmental management and is party to several international and regional environmental agreements and conventions. The key national environmental law is the Law on Nature Protection (1992). A brief description of this law and the other supporting laws related to environmental protection is presented below.

45. The law "On nature protection" (1992) states legal, economic, and organizational bases for the conservation of the environment and the rational use of natural resources. Its purpose is to ensure balanced relations between man and nature, to protect the environmental system and to guarantee the rights of the population of a clean environment. Article 25 of this law states that State Environmental Expertise (SEE) is a mandatory measure for environmental protection, preceded to decision-making process. In addition, article 25 says that the implementation of the project without a positive conclusion of SEE is prohibited.

46. Law ***"On Atmospheric Air Protection"*** (1996, amended on 10.10.2006). It describes regulations on atmosphere protection and its objectives. It specifies standards, quality and deleterious effect norms, requirements on fuels and lubricants, production and operation of vehicles and other transport means and equipment, ozone layer protection requirements, obligations of enterprises, institutions and organizations toward atmospheric protection, and compensations for damages from atmospheric pollutions.

47. Law ***"On water and water use" (***1993). It regulates the water relations, rational use of water by the population and economy. The law regulates the protection of waters from pollution and depletion, and prevention and liquidation of harmful effects of water, improvement of water bodies and the protection of the rights of enterprises and institutions, organizations and dehkan farms and individuals in the field of water relations.

48. ***Land Code*** of the Republic of Uzbekistan (1998). It aims to regulate land relations in order to ensure that present and future generations have science-based, sustainable use and conservation of land, breeding and improvement of soil fertility, conservation and improvement of the environment and creating conditions for equitable development of all forms of management, the protection of individuals and legal entities' right for land, as well as strengthening the rule of law in this area.

49. ***Law "On Wastes"*** (2002, as amended on 2011). It addresses waste management, exclusive of emissions and air and water pollution, and confers authority to the SNPC concerning inspections, coordination, ecological expertise and establishing certain parameters with regard to the locations where waste may be processed. Enterprises are responsible for their waste, but, if they recycle, they may be provided with assistance from the state budget, the National Fund for Nature Protection or voluntary payments. The principal objective of this law is to prevent negative effects of solid wastes on people's lives and health, as well as on the environment, reduce wastes generations, and encourage rational use of waste reduction techniques in household activities.

50. ***Law "On Protected Natural Reserves"*** (2004) - The purpose of this Law is to regulate relations in term of organization, protection and use of protected natural territories. The main tasks of this Law are the preservation of typical, unique, valuable natural objects and complexes, the genetic fund of plants and animals, the prevention of the negative impact of human activities on nature, the study of natural processes, the monitoring of the environment, the improvement of environmental education.

51. ***Law "On environmental control"*** (2013) - The purpose of this Law is to regulate relations in the field of environmental control. The main objectives of environmental control are: (i) prevention, detection and suppression of violation of the requirements of legislation in the field of environmental protection and rational use of natural resources;(ii) monitoring the state of the environment, identifying situations that can lead to environmental pollution, irrational use of natural resources, create a threat to life and health of citizens; (iii) determination of compliance with the environmental requirements of the planned or ongoing economic and other activities; (iv) ensuring compliance with the rights and legitimate interests of legal entities and individuals, performing their duties in the field of environmental protection and rational use of natural resources.

52. Other laws and standards applicable for the current project are:

- Law on Protection and Usage Objects of Archeological Heritage (2009);
- Decree of Cabinet Ministries of RUz on the procedure of issuing permits for special water use and consumption No. 171 of 14.06.2013;
- Decree of the Cabinet of Ministers of the Republic of Uzbekistan on Approval of the collection and disposal of used mercury-containing lamps. No. 266 of 21.09.2011;
- State Standard - Water quality. O'z DST 951:2011 – Sources of centralized household water supply. Hygienic, technical requirements and classification code;

- State Standard - Drinking water. O'z DST 950:2011 – Drinking water. Hygienic requirements and quality control;
- State standard O'zDSt 1057:2004 "Vehicles. Safety requirements for technical conditions" and O'zDSt 1058:2004 "Vehicles. Technical inspection. Method of control";
- SanR&N RUz No.0179-04 Hygienic norms. List of Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the Republic of Uzbekistan including Annex 1;
- SanR&N RUz No. 0158-04 Sanitarian Rules and Norms on collection, transportation and disposal of wastes contained asbestos in Uzbekistan;
- SanR&NRUz No. 0267-09Admissible noise level into the living area, both inside and outside the buildings;
- SanR&NRUz №0120-01 Sanitarian Norms of allowed level of noise at the construction sites;
- SanR&NRUz No 0088-99 Sanitarian requirements for development and approval of maximum allowed discharges (MAD) of pollutants discharged into the water bodies with waste waters.

53. As per ADB SPS (2009) guideline, "when host country regulations differ from these levels and measures, the borrower/client will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the borrower/client will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in this document". Analysis of environmental standards and requirements, conducted within the IEE, showed that the main differences between IFC guidelines and national standards applicable for the project were noted in vibration and noise standards. More details information and comparison of both standards are presented in Chapter 5.2.1.

2.2.3. National EIA requirements

54. The national EIA procedure is regulated by **Law on Environmental Expertise** and the Regulation on State Environmental Expertise (SEE) approved by Cabinet of Ministries' Decree No.491 dated from 31 December 2001 with amendments in 2005 and 2009. The regulation defines the legal requirements for EIA in Uzbekistan. SEE is a review process conducted by the Center for SEE ('*Glavgosecoexpertiza'*) under *Goskompriroda* at either the national or the regional level, depending on the project category.

55. *Goskompriroda* on state environmental expertise is a uniform system of State Environmental Expertise, methodological guidance of which implemented by *Glavgosecoexpertise*.

56. Pursuant to Section 10 of the Regulation on SEE, the developer must conduct the EIA assessment process ('OVOS' is the national acronym) in a staged approach, providing the *Glavgosecoexpertiza*/*Gosecoexpertisa* with OVOS documents for review at three distinct stages of the Project. Section 11 of the Regulation on SEE outlines the information that should be within the documentation at each of these stages. The three OVOS stages and their required deliverables are summarized as follows:

57. **Stage I** *:The 'Concept Statement on Environmental Impact'* ('PZVOS' is the national acronym), to be conducted at the planning stage of the proposed project prior to development funds being allocated.

58. **Stage II** *:The 'Statement on Environmental Impact'* ('ZVOS' is the national acronym), to be completed where it was identified by the *Glavgosecoexpertiza/Gosecoexpertise*at Stage I that additional investigations or analyses were necessary. The Statement must be submitted to the *Glavgosecoexpertiza/Gosecoexpertise* before approval of the project's feasibility study, and therefore before construction.

59. **Stage III :** *The 'Statement on Environmental Consequences'* ('ZEP' is the national acronym) represents the final stage in the SEE process and is to be conducted before the project is commissioned. The report details the modifications to the project design that have been made from the *Glavgosecoexpertiza/Gosecoexpertise* review at the first two stages of the EIA process, the comments received through the public consultation, the environmental norms applicable to the project and environmental monitoring requirements associated with the project and principal conclusions.

60. SEE approval (*Glavgosecoexpertiza/Gosecoexpertise* opinion) is a mandatory document for project financing by Uzbek banks and other lenders (Section 18) at Stages I and II and for project commissioning at Stage III of the national EIA procedure.

61. All economic activities subject to SEE are classified into one of four categories:

- Categories I and II — "high and medium risks of environmental impact" (SEE is conducted by the national SNPC within 30 days, all EIA materials are required);
- Category III — "low risk of impact" (SER is conducted by regional branches of SNPC within 20 days, all EIA materials are required); and
- Category IV – "low impact" (SEE is conducted by regional branches of SNPC within ten days, only a draft EIA is required).

62. As per national legislation the Project belongs to Category 3 with respect to their environmental impact (low impact risk)[9]. Prior to commencing construction such project requires the conduct of the Environmental Impact Assessment and Environmental Appraisal from the State Committee on Ecology and Environment Protection at the provincial level. A national EIA will be developed by a national design institute on a project detail design stage.

63. GAP analysis between ADB safeguards requirements and Uzbek environmental legislation is presented in Table 1a.

[9] Appendix 2 of the Cabinet Ministers' Decree (CMD) of the RUz No. 491, dated from 2001 with amendments made in CMD # 152 dated from 2009.

Table 1a: Gap Analysis Between ADB Safeguards Requirements and Uzbek National Environmental Legislation

Aspect	Asian Development Bank	National Uzbek Regulations	Harmonized Framework
Environmental Policy and Regulations	ADB's SPS (2009) sets out the policy objectives, scope and triggers, and principles for three key safeguard areas: i. Environmental safeguards, ii. Involuntary resettlement safeguards, and iii. Indigenous peoples safeguards	Environmental assessment and permitting procedure in Uzbekistan is set out in the following laws and regulations: i. The Law on Nature Protection (1992); ii. The Law on Environmental Expertise (2000), and iii. Resolution of Cabinet Ministries (RCM) # 491 (2001) (with amendments # 152 (2005) on "Regulation on Environmental Expertise" (2001)	
Screening	ADB carry out project screening and categorization at the earliest stage of project preparation when sufficient information is available for this purpose using REA checklist. Categorization into Category A, B, C, FI	The category of the project is defined in accordance with Appendix 1 to RCM # 491 (152). The Appendix provides a list of activities divided on 4 categories (para 62 of this IEE).	The Project is Categorized in to 'Category B' (ADB classification) and category 3 (national legislation)
Scoping	Avoid, minimize, mitigate and/or offset for adverse impacts and enhancement of positive impacts through environmental planning and management	The environmental assessment should evaluate: (i) compliance of proposing project with environmental requirements, (ii) level of risk related to project implementation on people's health and environment, and (iii) efficiency of developed measures to mitigate identified impacts.	Conduct a process of Environmental Assessment that will consider in an integrated manner the potential environmental (including labor, health, and safety) risks and impacts of the project.
	EA takes into account potential impacts (direct, indirect and cumulative) and risks on physical, biological, resettlement, socio-economic (including health and safety), and physical cultural resources	Environmental assessment considers the project's potential impacts on the **physical, biological, socio-economic and cultural resources, including cumulative impacts**.	The Environmental Assessment will take into account natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources

Aspect	Asian Development Bank	National Uzbek Regulations	Harmonized Framework
Alternatives	Examination of financially and technically feasible alternatives to the project location, design, technology and components, their potential environmental and social impacts Consider no project alternative.	For the ZVOS, consideration of **alternatives** is required. Alternatives that may be assessed include alternatives in; processing, technical design, location of the facility, architectural and planning options. Another mandatory requirement is consideration of the **zero option**.	Assessment of alternatives will include the location and design.
EIA Report	Guidelines and Table of Contents are provided for EIA report in SPS (2009): (i) Executive Summary, (ii) Policy, Legal and Administrative Framework, (iii) Description of the Project, (iv) Description of the Environment, (v) Anticipated Environmental Impacts and Mitigation Measures, (vi) Analysis if Alternatives, (vii) Information disclosure, Consultations, and Participation, (viii) Grievance Redress Mechanism, (ix) Environmental Management Plan, and (x) Conclusion and Recommendation. EMP will include proposed mitigation measures, monitoring and reporting requirements, institutional arrangements, schedules, cost estimates and performance indicators	The RCM # 491 defines activities which are needed to be undertaken under ZVOS preparation. Description of undertaken activities needs to be included into the ZVOS report. The RCM requires conduction of the followings: (i) assessment of existing environmental conditions and socio- economic conditions, (ii) project description, (iii) anticipating discharges, emissions, wastes, their impact on environment and way disposal, (iv) collection, storage and disposal of wastes (v) analyst of alternatives, (vi) institution, technical and technological mitigation measures, (vii) analyze of emergency risk, probability of occurrence and emergency containment measures, (vii) forecast of changes in environment after project commences operation. The complexity of the report depends on category of the project.	The IEE and EMP reports will follow the table of contents proposed in ADB's SPS (2009).
Public Consultations	Carry out meaningful consultation with affected people and facilitate their informed participation Ensuring women's participation in consultation. Involving stakeholders, project- affected	Public meetings are held if required at the time of the ZVOS (second stage). But this requirement is not mandatory. The need for public consultations is identified at the time of the PZVOS. Participants at	Consultations will be carried out with the stakeholders, affected people, NGOs. Questions and concerns raised during public consultations held in

Aspect	Asian Development Bank	National Uzbek Regulations	Harmonized Framework
	people and concerned NGOs early in the project preparation and ensure that their views and concerns are made known and understood by decision makers and taken into account The consultation process and its results are to be documented and reflected in the environmental assessment report	public meetings include the author of the PZVOS, the project developer and stakeholders. Public consultation meetings have to be announced in the media. If Public Consultation have been conducted, the results of the public meetings are formalized by the minutes and verified by the signatures of the attendees. The minutes of the public meeting or the shorthand records shall be attached to the materials of draft IEE. As a result of the public meetings, the people have an opportunity to state their proposals, to influence on the decision making and if required to appeal for their reconsideration	Feasibility stage is considered. Rural Citizen Assembly level consultations will be held with the affected people with inviting the main stakeholders. All questions and concerns raised during public consultation will be included in IEE. Signed list of participants, photos from meetings will be attached to this IEE.
Public Disclosure	Draft IEE will be published in ADB website	National environmental legislation does not require publishing PZVOS (ZVOS).	IEE report (English and Russian) will be published in ADB and AIPAC websites. The copies of the IEE report will be made available with the district hokimiyat and Andijan branch of State Committee on Ecology and Environment Protection.
Monitoring and Reporting	The borrow/client has to monitor and measure the progress of implementation of the EMP and prepare periodic monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions if any	Monitoring of implementation of mitigation measures developed under IEE is responsibility of design company developed Feasibility Study (author's supervision). External monitoring could be conducted by Representatives of State Nature Protection. There are no requirements on submission report during construction period in national environmental legislation	Environmental Monitoring Plan will be developed under this IEE to monitor implementation of EMP requirements. The IEE also includes requirements on preparation of semi-annual Environmental Monitoring Reports and their submission to ADB for further disclosure on ADB and AIPAC's websites.

Aspect	Asian Development Bank	National Uzbek Regulations	Harmonized Framework
Grievance Redress Mechanism	The GRM has to be established to receive and facilities resolution of affected peoples' concerns, complaints, and grievances about the project/s environmental performance.	A grievance redress procedure in Uzbekistan is also regulated by the national legislation of Republic of Uzbekistan, in particular by the law "On Citizens' Applications" and the "Law on the order of submission of appeals of physical and legal entities" ((#378, 03 December 2014)	The GRM for this project will be developed on ADB requirements with taking into account national requirements

64. The Table 1 presents approvals and permissions from national agencies which are needed to be received prior commencement of civil works and the project operation.

Table 1: List of Necessary Approvals and Permissions

#	Name of the document	Time of receiving permission	Agency issuing permits	Responsible entity
1	Environmental Appraisal (Positive Conclusion of Environmental Expertise)	Prior commencement of the construction works	State Committee on Ecology and Environment Protection (SCEEP)	Developer of national feasibility study
2	Permission/license for using existing borrow pits or opening new ones	Prior commencement of the construction works	SCEEP	Contractor
3	Permission on cutting trees and bushes	Prior commencement of the construction works	SCEEP	Contractor
4	Permission for temporary use of ground water for drinking purposes	Prior commencement of the construction works	SCEEP	Contractor
5	Permission for disposal of solid wastes and sewage during construction period	Prior commencement of the construction works	"Tozahudud" entity under SCEEP	Contractor
6	Statement on Environmental Consequences (Permission on waste water, emissions discharge, disposal wastes)	Prior commencement ALC operation (for each phase separately)	SCEEP	"Uzbekozikovqatholding"

7	Permission on special water use for surface water sources	Prior commencement ALC operation (for each phase separately)	SCEEP	“Uzbekozikovqatholding”
8	Permission for disposal of solid wastes and sewage	Prior commencement ALC operation (for each phase separately)	“Toza hudud” entity under SCEEP	“Uzbekozikovqatholding”
9	National Environmental Appraisal ZVOS	Prior granting permission to open new production or precessing on the territory of ALC	SCEEP	“Uzbekozikovqatholding”

2.2.4. International Environmental Legislation

65. It is important that the Project meets international lending requirements. The following international guidelines are relevant to the Project and will be considered during the EIA process:

- ADB’s Safeguards Policy Statement (June 2009);
- ADB´s Operations Manual Bank Policies: Safeguard Policy Statement (March 2010);
- ADB`s Environmental Assessment Guidelines (2003); and
- IFC General Environmental, Health and Safety Guidelines (April 2007).

International conventions

66. Under international cooperation in the field of environment protection, Republic of Uzbekistan signed number of International Conventions, which should be undertaken by State Committee for Ecology and Environment Protection of the RUz. Those potentially applicable to the Project, and for which Uzbekistan is signatory, are outlined in Table 2.

Table 2: Key Applicable International Conventions and Protocols

Convention or protocol	Overview	Relevance to project
UN Framework Convention on Climate Change (2007)	The Kyoto Protocol (a Protocol to the UN UNFCCC) aims to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.	The Project will not lead to increasing emission to atmosphere.
Kyoto Protocol (1997), ratified in 1999		
Paris Agreement on Climate Change (2016)	Paris Agreement provides an opportunity for countries to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.	
Convention Concerning the Protection of World	The Convention Concerning the Protection of World Cultural and Natural Heritage is the	The Project will have no interaction with these. As

Cultural and Natural Heritage (2004).	precursor to the establishment of UNESCO World Heritage Sites as a place (i.e. natural or built environment) that is listed by the UNESCO as of special cultural or physical significance.	such, requirements under the convention will not be triggered.
The Stockholm Convention on Persistent Organic Pollutants (2004)	The Convention is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment.	The project will comply with national and international standards for hazardous wastes (chemicals) generation and management.

3. DESCRIPTION OF THE PROJECT

67. An agro-logistic center (ALG) is physical infrastructures where commercial exchanges are carried out, normally between producers, exporters, wholesalers, distributors and retailers, gathered with the objective of buying and selling products and where merchandise, that give rise to the exchange, is physically present. In these areas, it is also frequent the presence of other types of "operators" that provide logistic, financial and other activities necessary for the proper commercial operation and sanitary control of the food products that are marketed through the market.

68. The ALCs are a public initiative, which aims to achieve greater efficiency in the marketing and export of agricultural products, improving the conditions in which transactions are currently carried out, promoting the concentration and classification of agricultural production and maximizing relations between producers, wholesalers, exporters and retailers.

69. The ALC will be built in Andijan district of Andijan province (Figure 1). The ALC will occupy 57 ha of agriculture land which will be acquired for the project in accordance with relevant national[10] and ADB requirements.

70. The site plots borders with the highway connecting the Andijan city (central city of the Andijan province) and Asaka - second largest city in the province. The railway line Andijan-Fergana-Tashkent is located on the north-west of the site. There is small administrative building on the south west part of the plots.

[10] Land Code of RUz (1998), Resolution of Cabinet Ministries (RCM) of RUz # 97 (2006), RCM 146, 2011.

Figure 1. Location of Project Site in Andijan Province, Andijan District

71. A Master plan for creation of agro-logistic center is developed under the current project. The Master Plan will be implemented in two stages through gradually construction of the following building and facilities:

First stage: i) post harvest buildings, ii) cold storage, iii) 2 wholesale markets for small farmers and iv) customs, (v) administrative building.

Second stage: i) wholesale markets for medium and large wholesalers, brokers and exporters, ii) added value activities building, iii) meat and dairy products pavilion and iv) upgrading of post harvest buildings / train terminal.

72. Wholesale markets and administration will operate 10 hours per day, cold storages will operate 24 hours. Operation schedule of post harvest facilities will be defined by ALC's administration after ALC commissioning.

73. The layouts of proposed ALC is presented in Figure 3. The layout includes all facilities which will be constructed under Master Plan. Description of each pavilion is provided below:

3.1. Post-harvest and Processing Auxiliary Warehouses, both for export and for internal distribution and consumption

74. A warehouse is proposed to offer common post-harvest services to operators that will market their products in the domestic and exports market, equipped with a 17 semi-manual process line, with a capacity of 10-15 tons/hour each, in accordance with the forecast of processing volumes, with the following allocation:

- 3 processing lines for small fruits.
- 2 processing lines for Tubers.
- 7 processing lines for tomatoes and fruits with similar size and shape.
- 2 processing lines for vegetables; cucumber, pepper, carrots and other vegetables with similar size and shape.
- 2 processing lines for cabbage, lettuce and other spherical vegetables.
- 1 processing line for watermelon, melon and pumpkin.

75. Flow chart of processing is presented on Figure 2.

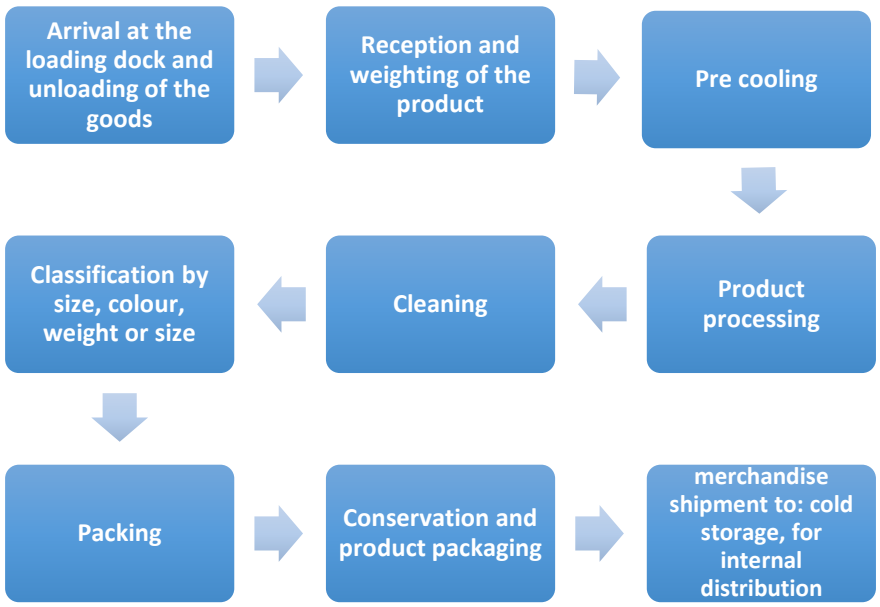


Figure 2: Processing Flow in Post Harvest Area

Figure 3: Layout of Proposed ALC in Andijan Province:

1- entrance, 2 - administrative area, 3-electrical, water and other supplies, 4a - fruits and vegetables market for small farmers, 4b – F&V market for medium size farmers, 5 - meat market, 6-add-value pavilion, 7 - Area for storage, cleaning and management of packaging, pallets and crates., 8 – Cold storage Building, 9, 10,11 - post harvest area, 12 –waste management area, 14 – water treatment plant, 15 – reserved area, 16 – Customs and warehouses for logistics and transport, containers and truck center, 17 - Train terminal / Dry port.

76. Total area of post harvesting area is 14,544 m^2. The examples of proposed lines are presented in Figure 3-4.

Figure 4: Example of Post Harvesting Area

Cold storage

77. **Cold storage building.** A cold storage building with a capacity of 60,000 m^3 has been dimensioned with a capacity to provide services up to 1.5 M tons of fruits and vegetables every year (21,000 tones in one single moment), in accordance with the forecast of commercialization volumes. The cold storage building is proposed to serve the products to be marketed and exported through the ALC, with 60 refrigeration or freezing chambers as RACKS model, which must have minimum three storage levels. The size of each chamber would be about 10x15x7 meters, with capacity for cold storage, in cages of 1x1.2x1.8 meters. All this in modular surface and in reserve surface, which allows to increase the number of chambers, depending on demand, without the need for new buildings. In summary, a cold storage will consist of the following: (i) administrative area (offices, meeting rooms, dining room, sanitary, toilets, shower and etc.), (ii) warehouse area (building for engine room, electrical rooms, warehouse for necessary chemicals in cold storage, warehouse for cages, racks and etc.), and (iii) area for cold storage (chambers, tunnel for frozen, handling area, refrigerated warehouses and etc.

Figure 5: General View of Clod Building

Figure 5a: View of Chambers Inside Cold Storage Warehouse

Wholesale Market of Fruits and Vegetables. Area for medium sized farmers, brokers, consolidators, wholesalers and exporters

78. The wholesale market model proposed is as follows: Fruits, vegetables and tubers wholesalers' area, in four warehouses or market pavilions, with a central aisle and a total rentable commercial area of around 18.000 m^2, in accordance with the forecast of internal distribution and commercialization volumes (400,000 / 450,000 tones per year). A market model based on a central aisle of buyers and lateral loading and unloading, in which the merchandise is exposed and the buyers circulate, the transactions are carried out and part of non-palletized merchandise is sold.

79. At the back, each market stall has an external door (with a minimum of 3 m wide) that communicate with the loading and unloading dock. In general, the merchandise will be unloaded palletized in the future and will be shipped both palletized (large buyers) and in boxes (traditional retailer) through the docks.

Figure 6: Wholesale Market of Fruits and Vegetables

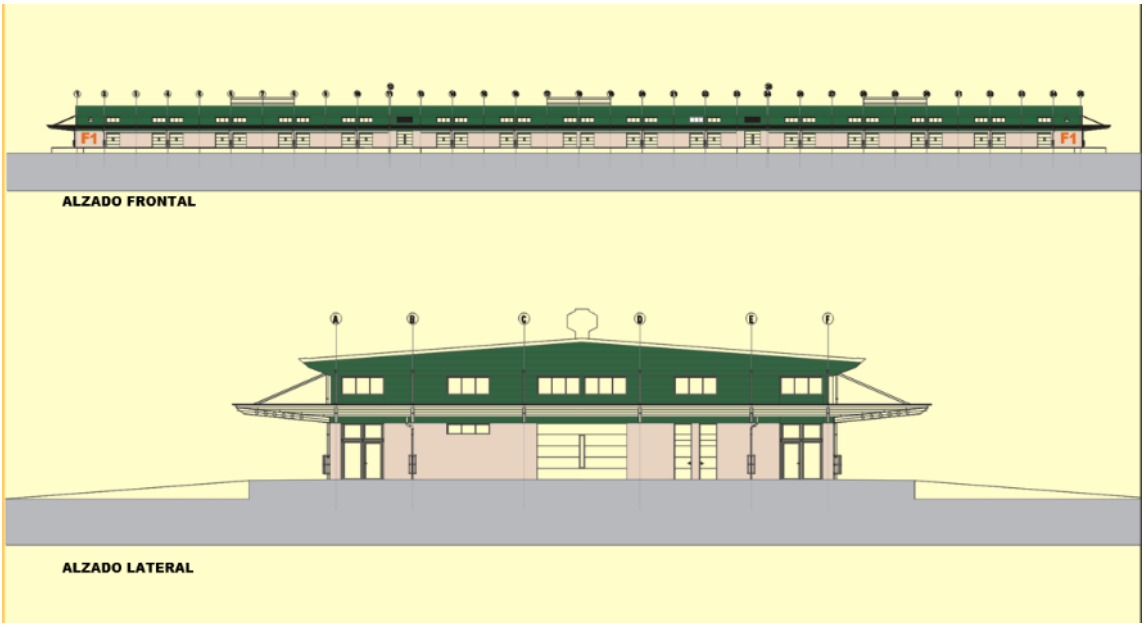


Figure 7: Front View and Side View

Wholesale Market. Area for Small Farmers

80. The producers' area is a specific and exclusive area for small producers, within the fruits and vegetables Wholesale markets. The spaces are rented per days or weeks, unlike the stalls of the wholesale market of fruits and vegetables that are rented per years. In this way, small producers who do not have enough product to market throughout the year can also access the market. It is equipped with common cold rooms. It is, therefore, an area that is exclusively for farmers who are duly documented and provided with the corresponding authorization through the Managing Body. Farmers sell directly, either continuously or occasionally, the products produced by themselves in their farms. It is recommended to group them at the ends of one of the four previously mentioned warehouses, in spaces of 2x3 meters, painted on the ground and provided with common cold stores. An example is presented below (Figure 8-9).

Figure 8: Area Distribution for Small Producers

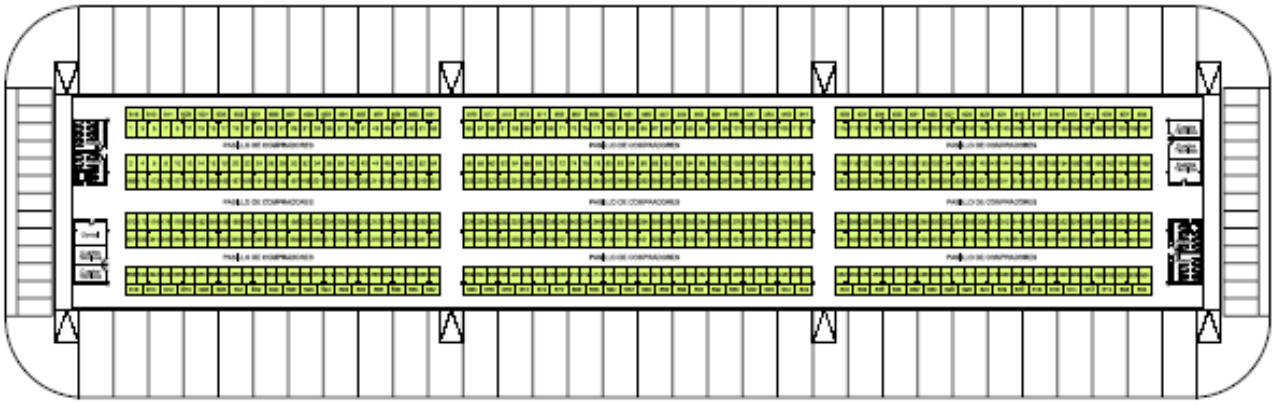
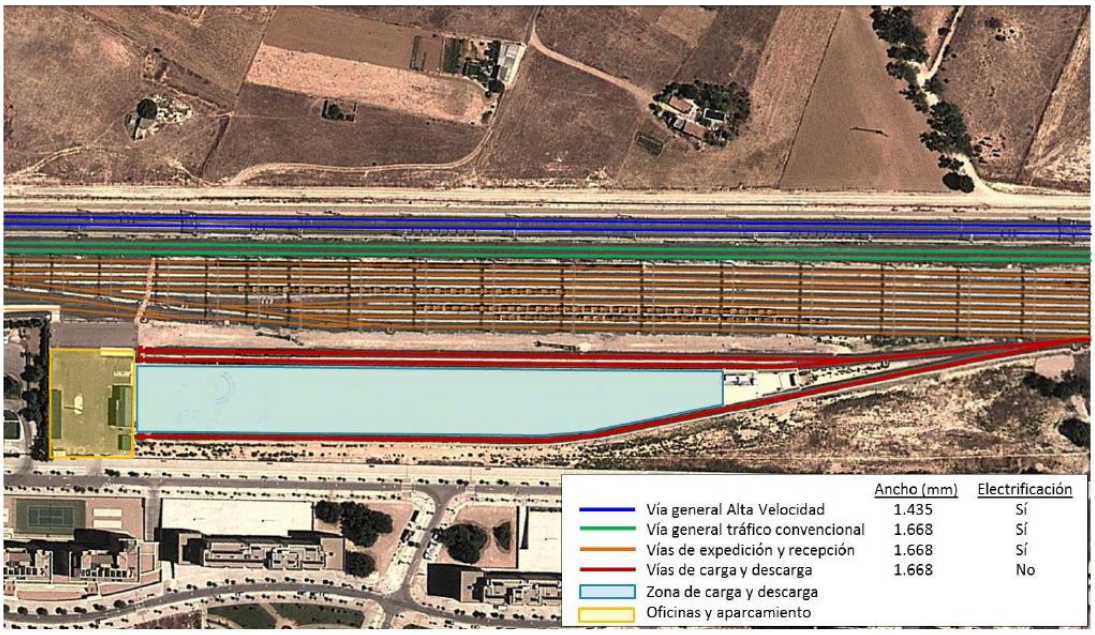


Figure 9: Scheme of Wholesale Market Pavilion for Small Farmers

3.2. Railway Terminal/Dry Pot. Customs

81. In the medium and long term, the railroad can become the main means of transport to export fruits and vegetables, even though at the present time, road transport is the most used. Therefore, it is proceeding to perform a functional pre-design in the reserved space, in which the following areas will be integrated:

- Intermodal area destined to the modal interchange road-rail. It is the zone where the merchandise changes of way of transport and the transfer of the load from transport by road to the railroad takes place;
- Logistics and Services Area, with specialized in logistics activity areas, distribution and transformation such as processing, storage, conservation and handling for agro-food operators. It also includes customs services, an auxiliary services area for workers and visitors, as well as management offices and a building for customs and phytosanitary inspection services.



Picture 10: Zoning of the Intermodal Area

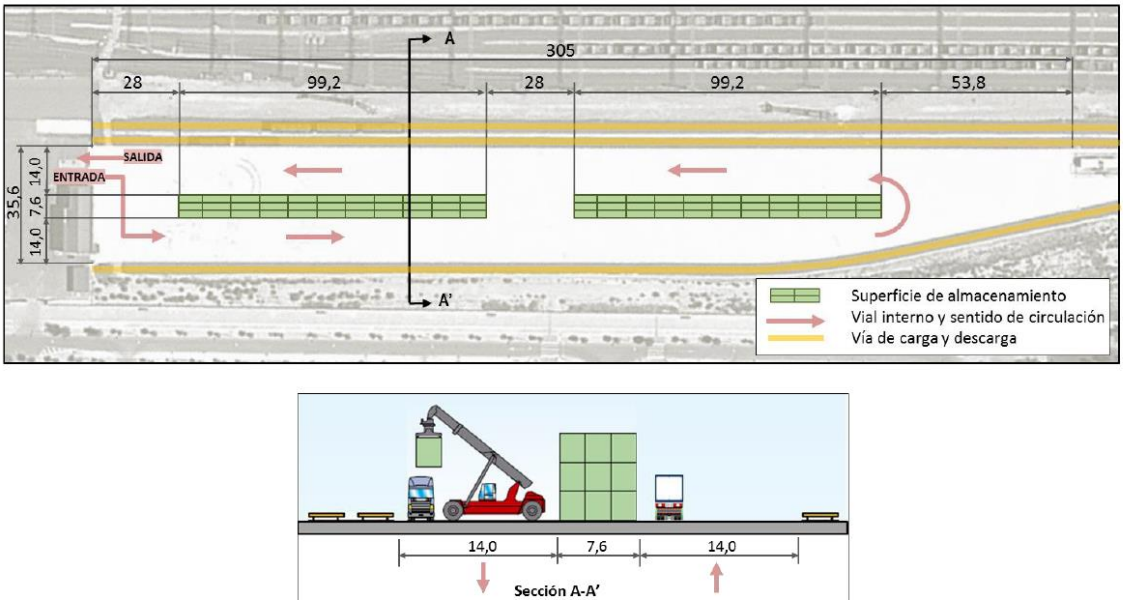


Figure 11: Distribution of Areas in the Loading and Unloading Area

Administrative Building

82. A 4-level building is proposed, with minimum 1,000 useful m^2 in each level. The administrative building comprises the administration building of the Managing Entity, and other spaces for services and related activities, such as customs clearance, laboratory, health and first aid centre, work office and other state agencies, day care, pharmacy, telephony and communications, self-service, sale of supplies, hardware store and similar, currency exchange and banking activities, restaurants, and laboratory, among others.

83. In the first level, the activities and related services would be located in individual rentable spaces of between 20 and 100 m^2 each. In the second level the offices for the Managing Entity and in the third level a business center, meeting and training rooms and the head office of the laboratory. In the 4th level the customs office.

Figure 12: Example of View of Administrative Building

84. ***Waste Management Area.*** Area to concentrate waste management in an integrated way towards the future cleaning plan. In relation to the waste management area it is proposed, that all commercial waste be agglutinated for selection and transport to the corresponding authorized managers, which will be called the Waste Management Area.

85. In accordance with plan, around 1.5 Mt of fruits and vegetables will be treated/sold in the ALC[11]. As per information provided by UFH, organic wastes generated during vegetables and fruits processing is estimated as equivalent to 0.002 % of total weight. It means that 3,200 ton of waste will be generated annually or 8.2 ton per day. However, distribution of waste generation during the year will be different during harvesting and non-harvesting seasons.

86. Waste management area would be a multi-purpose facility, equipped with various areas to manage commercial waste from the different ALC areas. A part of the installation could also be used as a storage area for cleaning vehicles, as well as for containers storage. In an initial period, a basic installation could be built, but it should consider, that in anticipation its growth and development as the selective withdrawal system becomes consolidated.

87. The elements that this equipment could have, depending on the waste management and cleaning plans that are approved, could be:

[11] FS report for Andijan ALC, Table 1.

- Control centre: Administrative centre of the facility, where all inputs and outputs of material will be controlled. Weighing tasks and statistical and administrative control would be carried out here. In turn, the personnel of this area could carry out environmental education work to raise awareness among users. The Plant Manager would also work here, plus administrative and managing personnel as well as shifts they would like to implement.
- Weighing scale, optional: certified and calibrated equipment for weighing, both inputs and waste outputs. If necessary, one weighting scale could be enabled for users and another for the transport and the waste disposal.
- User zone: An area so that users can deposit their waste correctly separated into fractions. There must be as many containers as fractions it wanted to be separated.
- Recovery zone: A space should be enabled to be used for the recovery of containers and packaging, such as boxes and pallets. In this way, these materials could be used again. An operator would be responsible for the selection and subsequent repair.
- Area for emptying containers from the storehouses or sheds. Space destined to empty the various containers, mainly organic stuff and "the rest". The containers can be emptied in the respective containers of materials from the user area.
- Maintenance area: Space for containers cleaning and repairing.
- Staff changing room module: Space enabled for cleaning workers to have their clothes, showers, lockers, dining room (in case they match).
- Reserve area: Space for storage containers and under repair.
- Parking area: Place destined for parking of the vehicles of the cleaning brigade when they are not on duty.

88. Among other facilities needed for normal operation of ALC will be:

- Access control;
- Road system;
- Parking lots for trucks and vehicles;
- Loading and unloading areas;
- Lighting system;
- Water supply networks;
- Sanitation network;
- Electrical supply network;
- Telephone and data network plus antenna;
- Gardens and streets;
- Links to external road system;
- Water treatment plant;
- Electrical installations;
- Fire protection system;
- Perimeter fence (of the whole plot).

89. During the second phase of project implementation ***Area for Large Exporters / Added Value Firms and Growth Reserve***. There is 72,000 m^2 of a leasable area. In this area, land is rented, and each company builds its facilities according to their needs. Within this area there are included those activities that by their origin and destination are related to the export storage, marketing and distribution, handling and preservation of perishable and semi-perishable foods and their derivatives.

90. It is recommended that identification and negotiation of their location in the ALC of the following types of businesses should be a priority: (i) Big Exporters and Processing Companies,

(ii) Additional cold facilities, (iii) Supermarket chains, (iv) Food companies that offer services to the hotel, restaurant and catering groups.

91. There is significant part of ALC territory which is considered as a ***Future growth area and expansion.*** It is recommended that **meat, dairy products, semi-perishable food products Market, also for distribution and local consumption.** A single pavilion of approximately 5,000 m^2 of rentable commercial space is proposed, (similar model to the fruit and vegetables pavilions). The Multipurpose Market is generally a warehouse for the commercialization of meat products and other foods not framed in Fruits and Vegetables market, for example, basic grains, cereals, preserves, cheeses, dairy and even flowers. In this warehouse wholesalers of meat products such as bovines, swine, avian, etc., will be located for any line of commercialization, which means, fresh, frozen and in trays, according to the needs of each client (supermarkets, restaurants, traditional butchers, etc.).

4. DESCRIPTION OF THE ENVIRONMENT

92. Andijan province is a large agro-industrial region of Uzbekistan. The province borders with the Republic of Kyrgyzstan from the North-East and the South, with Uzbekistan's Ferghana province – from the West, and with Namangan province – from the North-West. The total area of the territory is 4,240 square kilometers. The province is composed of 14 administrative districts and 3 cities. The administrative centre is Andijan city. It covers an area of 74,3 square kilometers.

Figure 13: Location of Andijan Province and Andijan District

93. The province's population numbers are 2,981,900 people (as of 1st July 2017), while it ranks the first in the country by the resident population density – 703,3 persons/km². People of more than 100 nations and ethnic groups reside in the province. The main population is represented by Uzbeks, and still there is a large number of Russians and Kyrgyz.

94. Andijan district, where one of the agro-logistic centers is planned to be built, is predominantly urban or semi-urban district. Its close proximity to Andijan city means that it mainly specializes in producing wheat, cotton, fruits and vegetables.

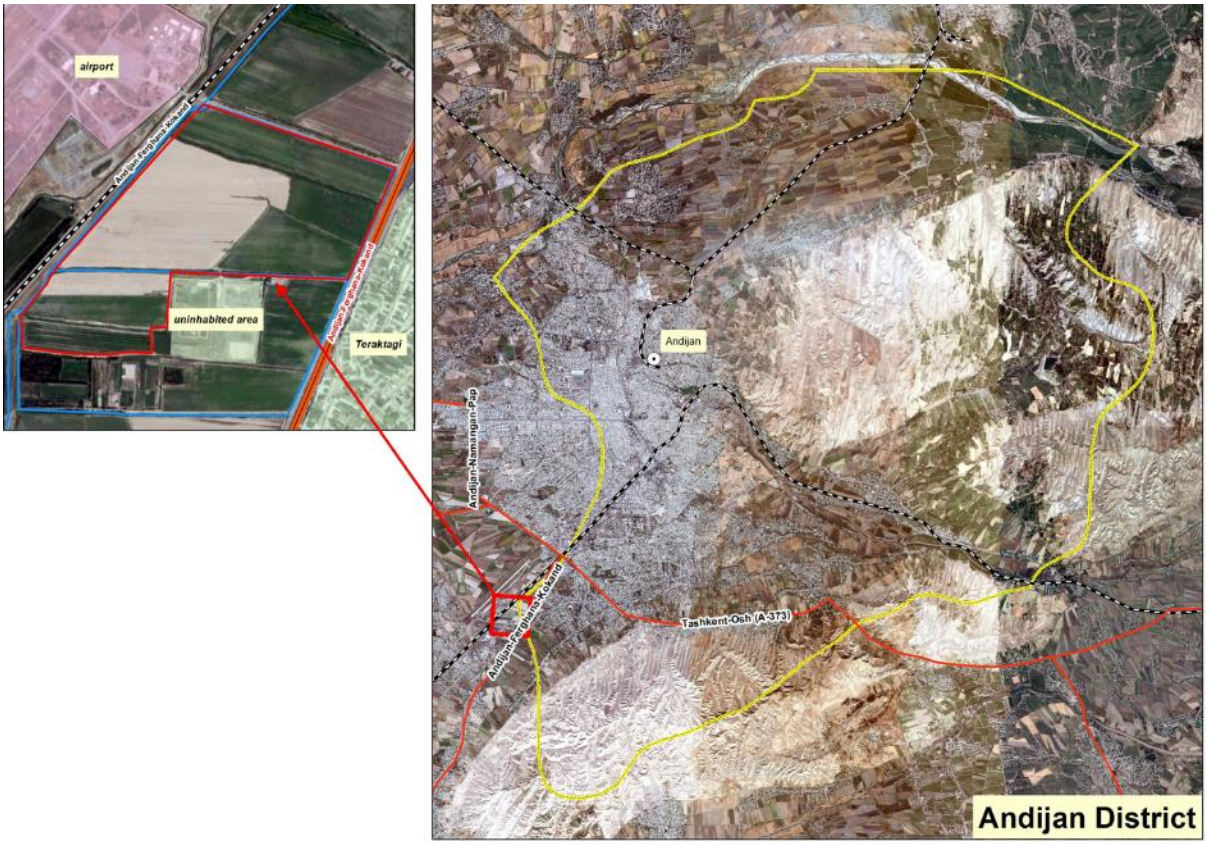
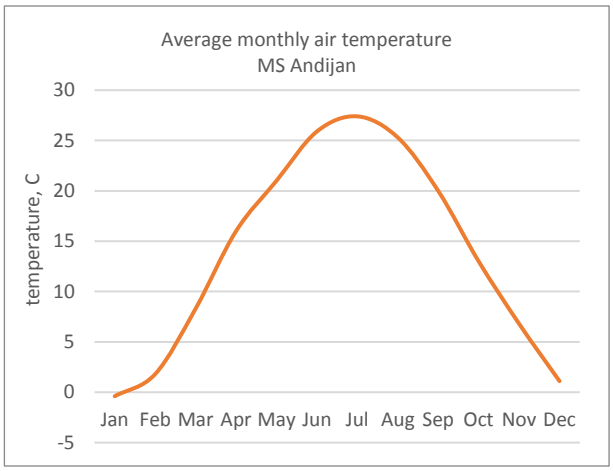


Figure 14: Location of ALC in Andijan District of Andijan Province (drawn in red)

4.1. Climatic data

95. Andijan province located at the central and eastern part of Ferghana climatic region that extends to the homonymous intermountain basin and the slopes of the mountain frame.

96. The relative orographic closure of the Ferghana Basin and its north-eastern position on the territory of the Republic determine the originality of it's climate. The plain and foothill parts of the region have the lowest average January temperature in comparison with other foothill-mountainous districts of Uzbekistan (-2 °- -4 °). Real wintertime lasts 3,5 months. Absolut minimum of temperature is -26° - -27° (in some places -30°). The average temperature of July is 26-28°. Absolute maximum of temperature is 40-42°. Annual precipitation on the east is 300-350 mm. Sum of positive temperatures is 4300-4600°.



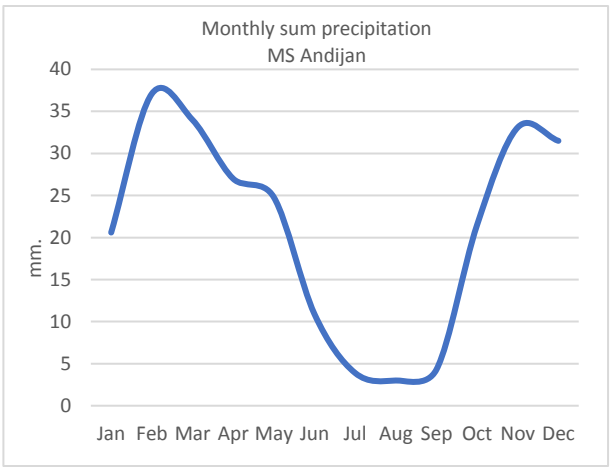
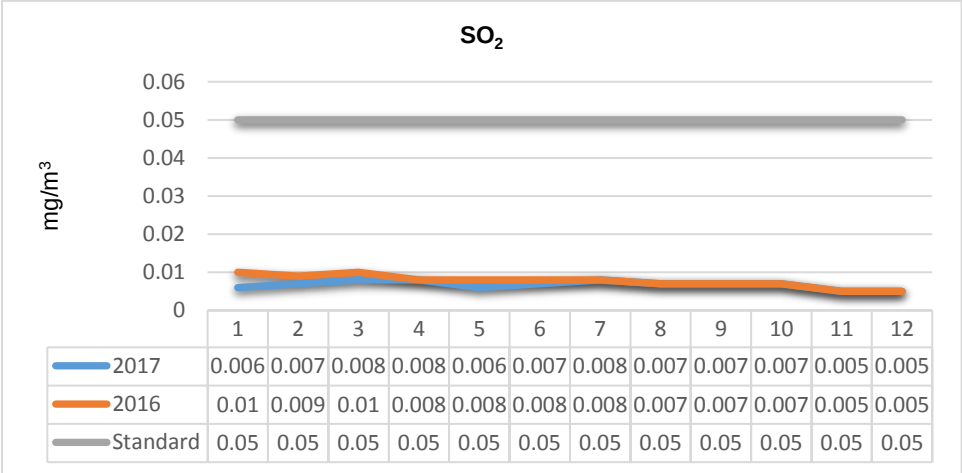


Figure 15: Climatic Conditions, Meteostation Andijan, 2017

97. Air quality of the project site was analyzed based on results of last years observations conducted by Andijan meteostation under Uzhydromet, which is closest to the project area. Meteostation conducts measurements of SO_2 and NO_2 gases and dust as major pollutants in this area. In accordance with received results, baseline air quality on SO_2 and NO_2 complies with national[12] standards (Figures 16-17) (Attachment 1).



	1	2	3	4	5	6	7	8	9	10	11	12
2017	0.006	0.007	0.008	0.008	0.006	0.007	0.008	0.007	0.007	0.007	0.005	0.005
2016	0.01	0.009	0.01	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.005	0.005
Standard	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

[12] Hygienic norms. List of Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the Republic of Uzbekistan including Annex 1. SanR&N RUz No.0179-04.

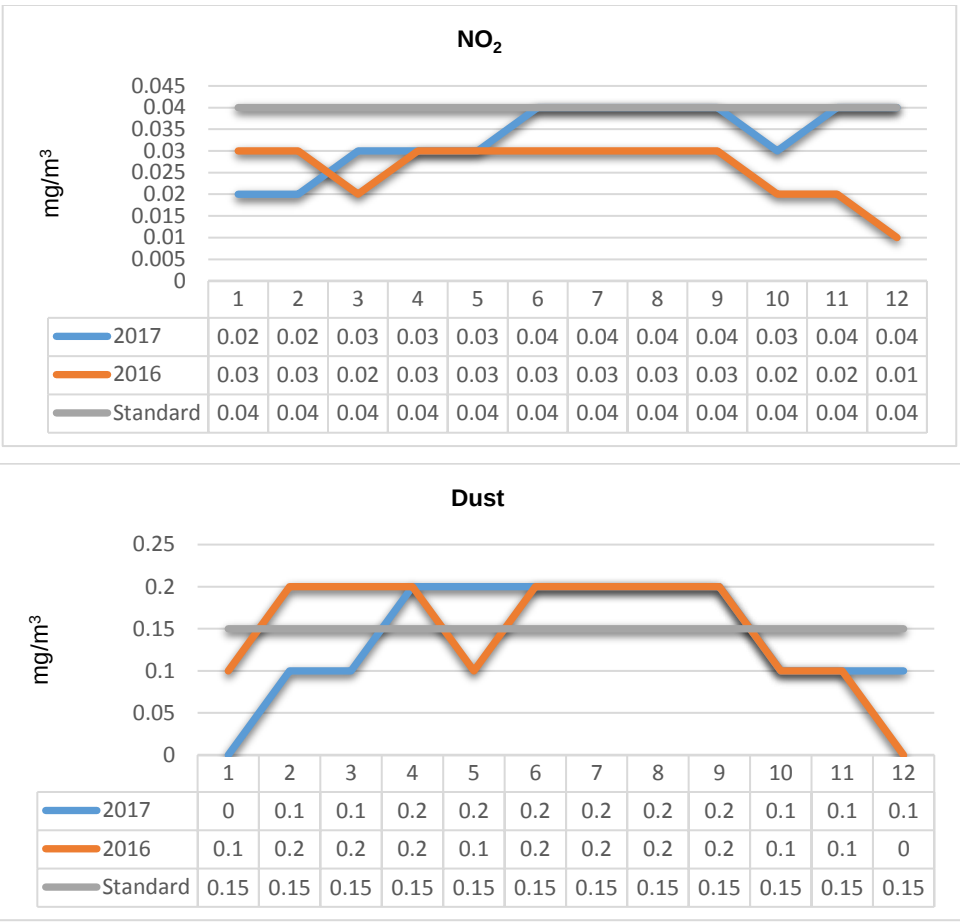


Figure 16: Data on Air Quality in the Project Area

Source: Uzhydormet, 2018.

98. However, some exceeding of dust level is observed for the project area. There is cement factory located in 650 meters to the west-north from the project site. During the consultation with representatives of district level of SCEEP and province hokimiyats, it was clarified that during next two years this factory will be dismantled and moved to another region remote from populated area.

99. As part of baseline survey, noise measurements on the project site were conducted in February 2018. As described in chapter 3 the project area is surrounded by agricultural lands. The closest settlement is located on another side of highway Andijan-Asaka. There is a dormitory of military base served for military airport on the west to the project area. There are existing noise sources for both locations - railway for military base and highway for settlement "Teraktagi" Rural Assembly of Citizens (RCA). The noise measurements were conducted for day and night time in front of nearest houses in accordance with guideline for transport traffic noise (Attachment 2).[13]

[13] GOST 20444-85 Noise. Transport flows. Methods for measuring noise performance.

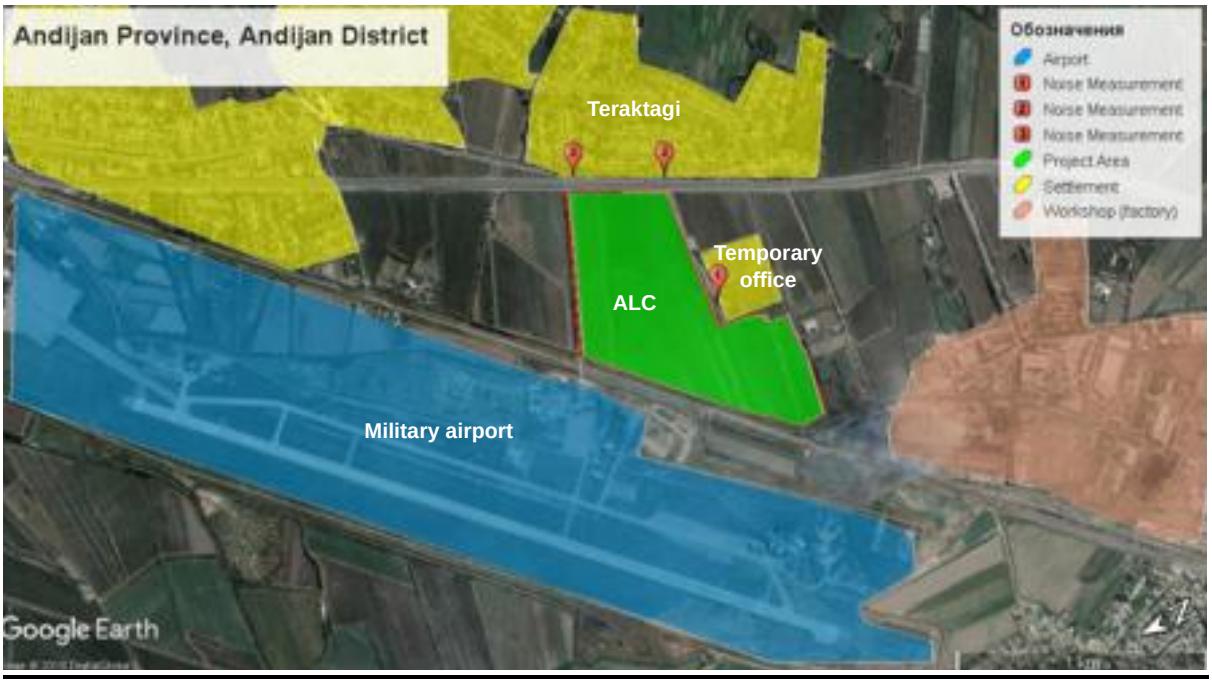


Figure 17: Location of Noise Measurement Points

100. It should be noted, that all houses in RCA "Teraktagi" designed without windows facing the street (Figure 18).

Figure 18: The Closest Houses Located in Front of Project Area.
Andijan District, Terktagi Settlement

101. Three types of standards will be applicable for the reviewing receptors – for living area, for area adjusted to highway and commercial area. The main receptor of noise on the project site is inhabitants of settlement Teraktagi and workers of office. The distance between border of project site (P2 and P3) and settlement are around 60 and 75 meters. The office is located more than 300 meters until office and 450 meters until military dormitory. On small office is located on the distance 40-50 meters from proposing construction site. The office works on temporary base. On the time of conduction this IEE, it did not work.

102. The standards are presented in Table 3. Therefore, for living area national and international standards are the same. However, for the area adjusted to the highway, national standards were applied (65/55 dB day/night time).

Table 3: Standards for Noise Level for Different Receptors

#	Type of receptor	National (dB)[14]		IFC (dB)[15]	
		Day time 7-23	Night time 23-7	Day time 7-23	Night time 23-7
1	Living area	55	45	55	45
2	Commercial area	60		70	70
3	Area adjusted to highway	65	55	-	-

103. Noise measurements were conducted in front of walls to review an ambient noise level in the project site.

Table 4: Results of Noise Measurements

#	Location/Point	Results of measurements		Standards (Table 3)		Exceeding, dB	
		Day time 7-23	Night time 23-7	Day time 7-23	Night time 23-7	Day time 7-23	Night time 23-7
1	P-1 Office area	55	43	60	-	-	-
2	P-2 Teraktagi RCA	75	73	65	55	10	18
3	P-3 Teraktagi	75	73	55	45	20	28

Source: PPTA Consultant, 2018.

104. As shown in the table ambient noise level in front of houses exceeds both standards for area adjusted to highway and for living area (Table 4).

Geological conditions

105. Andijan province is characterized by complicated geological structure. The Paleozoic, Mesozoic, Cenozoic deposits take part in the geological structure. Paleozoic deposits on the surface appear in the mountain frame of the Fergana depression and represented by the diverse complex of sedimentary-metamorphic and igneous rocks of the Silurian, Devonian and Carboniferous, which thickness is measured in thousands of meters.

106. The study area, as well as the entire Fergana valley from the surface composed of Quaternary sediments. Only in the adyrs band, in the arches of brachianticlinal folds facing the south, rocks of the upper Neogene are exposed.

107. According to the general scheme of allocation of artesian basins of Uzbekistan, Andijan city area includes in Fergana basin of the second order. The Fergana artesian basin is an intermountain depression, the geological structure of which involves rocks of all systems - from the Precambrian crystalline schists to the thick modern loosely fragmented quaternary formations. However, the areas of distribution of metamorphic and igneous rocks of the Precambrian and Paleozoic are not included in the limits of this artesian basin, since they mainly develop fractured and fissured-vein waters, which are mostly ground character.

[14] Sanitarian Norms and Rules (SanPiN) # 0267 (2007) "Admissible noise level into the living area, public buildings and outside the buildings."
[15] IFC General EHS Guidelines: Environmental Noise Management, Table 1.7.1, 2007.

108. The depth of occurrence of groundwater varies from 10-20 m (in the flat zone) to 100-150 m (in the adyr zone). In the project area the ground water is located on the depth in 3-5 meters.

Soil conditions

109. At the foothills and in the intermountain valleys of Andijan province, nonsaline bright, typical and fuscous serozem are developed in good drainage conditions of the upper terraces of river valleys, alluvial cones, and deeply defined loessial terraces.

110. The study area is covered with surface alluvial-proluvial deposits of Quaternary age. The total thickness of quaternary deposits in the Ferghana Valley reaches 1000-1300 m and more. During the entire Quaternary period, the accumulation of precipitation predominated in the area of research.

4.2. Water recourses

Surface water resource

111. The main water artery of the Andijan province is Kara Darya River that crosses the province from the East to the West, its water is mainly used for irrigation. There are 3 reservoirs and several lakes.

112. Andijan province is famous for its springs, the water of which is very tasty and useful. Thus, there are natural areas of protection in the province's territory, namely Baliqchi district, where the springs like Sariq Suv, Kul, Uch Buloq, and Tuzloq Buvi are located. The settlements of Nayman, Bouta Qori, Olim, Doustlik, Imom Ota hold the springs of Qora Bosh Buloq, Olim Buloq, Qirq Buloq, Qambar Ota, and Imom Ota. In total, there are 26 springs, predominantly of ascending type, registered in the territory. All of the springs have approaches and power grid.

113. The map showing large rivers and canals of Ferghana Valley is given in Figure 19.

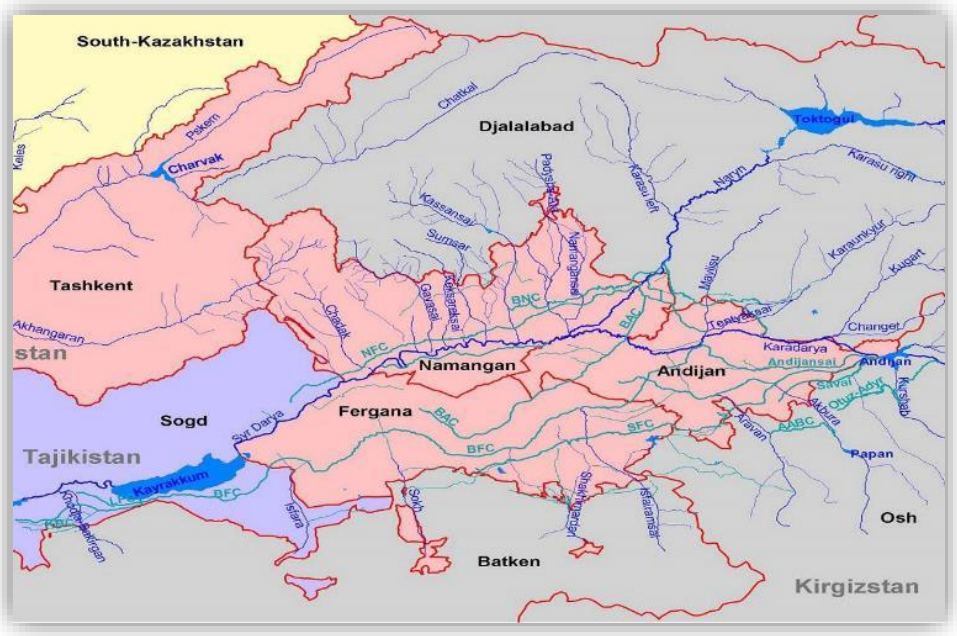


Figure 19: Hydrological Network of Andijan Province

114. The nearest natural watercourse to the projected center is Andijansay river, which flows to the south at a distance of 270 m. Andijansay is an ancient canal, its creation dates back to the 2nd millennium B.C. The total length of Andijansay is 76.7 km, the capacity is 50.0 m^3/sec.

115. Andijansay supplies water to crops in Kurgan, Djalakuduk, Andijan and Altinkul districts of Andijan province. In addition, canal water in Andijan city is used for the needs of industrial facilities and for flower gardens watering.

116. There is small water course flow on the north-west part of the project site. This water course is mainly used as a drainage canal. It is expected that treated sewage water from the ALC will be discharged into this canal.

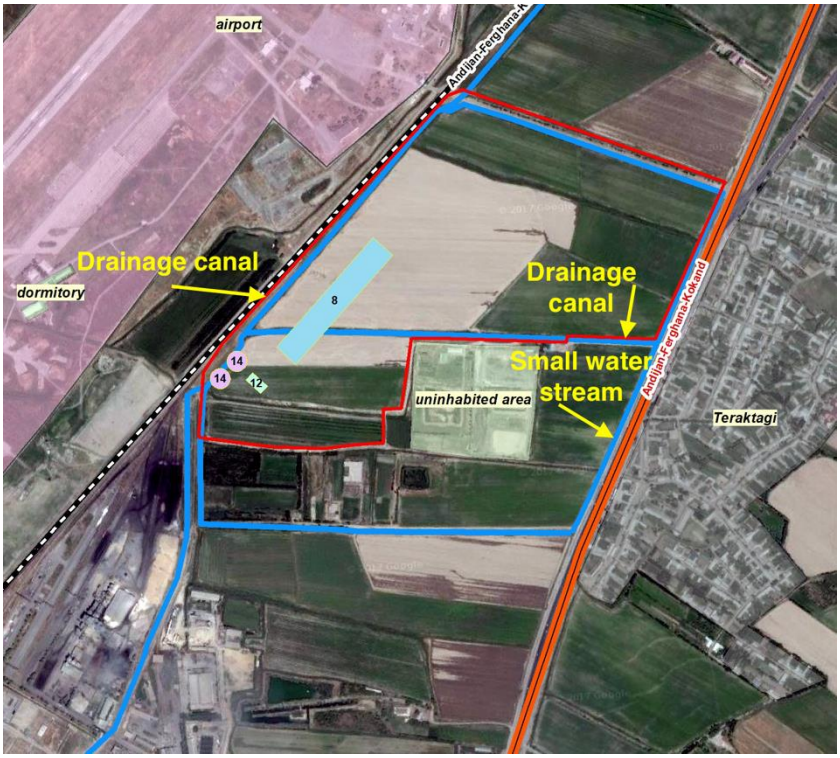


Figure 20: Watercourses in the Project Site

117. Therefore, water from this canal and drainage is used only for irrigation purposes. Water quality from two points (both samples from surface water) was analyzed and results are presented into Table 5:

Table 5: Water Quality in Points Close to Construction Sites

Components	Location		Standards[16]	Exceeding P1/P2
	P1	P2		
Suspended matter, mg/l	143	415	shall not be increased by more than 75 mg/l	68 / 340
pH	7.3	7.9	6,5-8,5	-
Dry residual, mg/l	622	712	1000	-
BOD_5	4.7	12.5	3	1.7 / 9.5
COD	40	104	15	25 / 89
NH_4^-	n/a	n/a	0.5	-
NO_3	n/a	0.20	40	-
Oil products	0.22	0.558	0,05	0.17 / 0.508

Source: PPTA, Baseline survey, February 2018.

118. As showed the results, water quality does not comply with national standards for water quality on BOD_5, COD, oil product and suspended matter.

[16] Sanitarian Norms and Rules # 0056-96, “Sanitarian norms and rules for protection surface water from pollution”, Ministry of Health of RUz.

Underground water resources

119. Ferghana Valley is rich in underground water stocks and has about 38.6 % of the underground water resources of Uzbekistan. The total stock of underground water in Ferghana Valley is estimated at about 6,500 m^3 a day, of which about 1,900 m^3 and 1,700 m^3 a day are in Andijan and Namangan provinces, respectively. Formation of underground water reserves takes place through infiltration from rivers, canals, streams, and irrigated fields.

120. In Ferghana Valley territory, a trend has been set in recent years of a growth in mineralization and total hardness of underground water with respect to their background content that often result from irrigation of lands. These studies of the state of underground water show that there were no changes recorded in the regional plan, but there are qualitative changes in the dry residue and the total hardness.

121. Depth of ground water table in the project site ranges from 3 to 5 meters. During the irrigation season ground water table may rise up to 2 meter. It may impact on construction activities during preparation of foundation for all buildings and facilities.

4.3. Biological resources

122. The landscape of the study area is mainly represented by dry mixed-grass steppe. There are areas of agricultural landscape, natural vegetation in which is replaced by crops of agricultural and horticultural crops.

123. The basis of natural vegetation is represented by high herbaceous plants, among which the following species are distinguished: scabwort (Inula grandis), quitch (Cynodon dactylon), coach grass (Elytrigia trichophora), and marshmallow (Alcea nudiflora). As part of the plant associations in spring appears ephemeral vegetation, which is represented mainly by wild grasses: sedge (Carex diluta, Carex physodes), vulpia (Vulpia ciliata), meadow grass (Poa bulbosa vivipara); along the banks of watercourses are common southern reed (Phragmites communis). There are areas overgrown with woody shrubs, consisting of oleaster (Elaeagnus angustifolia), dog rose (Rosa canina), and hawthorn (Crataegus pontica).

124. Near the Andijan city there are plantings of crops, technical, and also horticultural and truck crops. Along the settlements and cities roads are planting trees and shrubs typical of the Ferghana Valley. The most common species are: poplar white and black (Populus alba, Populus nigra), elm (Ulmus pumila), mulberry (Morus alba), plane (Platanus occidentalis), robinia (Acacia albida), oleaster (Elaeagnus angustifolia). In the garden plots are common fruit trees, there are plantings of berry crops.

125. The project site is located on the territory of the agricultural lands surrounded by highway from one side and railway from another. The settlements are located on the other side of highway Andijan-Asaka.

126. There are no rare or endemic species in the Andijan district territory. Around 120 junipers grow at the area adjusted to the project site, which could be cut during construction works. In case if these trees will have to be cut, the appropriate compensation will be paid to Goskomekologia in accordance with national legislation. However, during construction phase the Contractor will be recommended to save the trees as much as possible.

127. Since the project area are being cultivated for a long time, the fauna is represented by typical representatives of agrobiocenos – field mouse, lizards and various insect. Avifauna is represented by numerous species of birds that occur on the spans - in spring and autumn. Most often in the study area there are larks of several types: steppe, small skylark and crested lark (Calandrella cinerea, Melanocorypha calandra, Galerida cristata), red-headed bunting (Emberiza bruniceps).

128. There are no species included in the Red Book on the project site and in Andijan district as well due to high level of urbanization, industrialization and development of agricultural practice.

Natural protected areas

129. Among natural protected areas, there are protected sites falling into the IUCN's [International Union for Conservation of Nature and Natural Resources] categories III, IV, V. According to resolutions Nos. 178 and 179 of 13th April 2004 of the Cabinet of Ministers of Republic of Uzbekistan, following water conservation zones are located in the territory of Andijan province of Ferghana Valley:

- Water conservation zones of Karadarya river in Andijan province
- Water conservation zones of Syrdarya river in Andijan province

130. Local hokimiyats, former MAWR branches, and Forest Administrations are charged with establishing and ensuring security of water conservation zones.

131. Fergana Valley holds underground water stocks, and some of the underground water formation zones in Andijan province were granted the status of natural areas of protection. There are only one fresh underground water formation zones with the status of natural area of protection in Andijan province which is located in the another district more than 30 km away from the project site.

132. There are no other protected areas in Andijan and surrounded districts. Therefore, the impact on the biological resources will be negligible.

4.4. Socio-economic conditions

133. The Gross Regional Product (GRP) of Andijan province amounted to UZS 14,479 billion in 2017. The volume of industrial production has increased by 125.8%, industry (including industry) - by 117.3%, services – 105.1%, agriculture – 101.1%.

134. The province's priority branches of economy are agriculture and such industries as: car industry, mechanical engineering, and textile and clothing industries. One of the leading areas of economy is consumer goods production.

135. Total length of the province's asphalt motor roads is 8,200 km. There are 4 bus terminals and 8 bus stations in the province. The province's railway tracks used are 262 km long. The railways and motor roads network make it possible to transport export and import cargo in the direction China-Andijan-Tashkent.

136. Production of agricultural products in Andijan district by types of farming enterprises reveals interesting facts: almost all of wheat and all cotton are produced by commercial farmers,

while majority of fruits and vegetables, and almost 95% of meat and dairy products are produced by dekhkan farmers.

4.5. Cultural heritage

137. Among the historical sightseeing places of Andijan province, it is worth noting: Jome architectural complex (mosque and madrasa) located in a district of Andijan called Eski Shahar (Old Town); Babur's house museum situated on Boghi Shamol hill likewise in Andijan Old Town; the tomb of the Arab commander, Qutayba ibn Muslim, which is located in Pakhtakor village, Jalol Quduq district, 28 km from Andijan city; Khonobod park city, Ming Tepa archaeological monument located in the eastern part of Marhamat city, 38 km from Andijan city centre; Fozilmon Ota temple located in Fozilmon Ota village near Khonobod city, 70 km from Andijan's centre; Bibi Seshanba temple located in Sultonobod village of Kourgan Tepa district, 60 km from Andijan's centre. It is a sacred place where the healing springs Kouk Buloq and Qiz Buloq are situated.

138. The project area does not have historical monuments, and the closest site (Boghi Shamol park) from the above listed sights is located over a distance of 20 km from the project sites.

5. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

139. Anticipated the Project's environmental impacts were reviewed at the three stages – pre-construction, construction and operation stages. The summary of expecting impacts is presented in below table.

Table 6: Summary of Potential Impacts

Project activities	Potential impacts	Level of impacts and duration
Construction stage		
Site preparation (i) removing of top soil; (ii) site planning (leveling) (iii) temporary road	• Change in the land use; • Loss of fertile layer; • Soil disturbance (construction materials); • Generation of solid wastes – plants residual and stones; • Noise and vibration (from trucks and machinery); • Air pollution (traffic fumes and dust); • Surface and ground water pollution	• Moderate, long-term • Moderate, short-term • Moderate, short-term • Moderate, median-term • High, short term • High, median-term • Moderate, median-term
Main construction activities: main pavilions and supporting facilities, external communal networks (including water supply, waste water networks, electricity and internet) and etc.	• Solid wastes: • Hazardous • Non-hazardous • Construction materials; • Domestic wastes; • Waste water generation • Noise and vibration • Air pollution (traffic fumes and dust)	• Moderate, median-term • Moderate, median-term • Low, median-term • Low, median-term

Project activities	Potential impacts	Level of impacts and duration
	• Excavated soil • Pollution of water resources	• Moderate, median-term • High, median-term • Moderate, median term • Moderate, short-term • Moderate, median-term

Construction of internal roads and landscaping	• Solid wastes:
	  • Construction wastes;
	  • Domestic wastes;
	• Waste water generation
	• Noise and vibration
	• Air pollution (traffic fumes and dust)
		• Moderate, medium-term
		  • Low, medium-term
		  • Low, medium-term
		• Moderate, medium-term
		• Moderate, short-term and long-term
		• Moderate, short-term

Construction of access road	• Noise and vibration, • Air pollution (traffic fumes and dust) • Solid wastes, • Water resources pollution	• Low, short-term • Moderate, short-term • Moderate, short-term • Low, short-term

Installation of the equipment	• Solid wastes:
	  • Construction materials;
	  • Packing materials;
	• Noise and vibration
		• Low, medium-term
		  • Low, medium-term
		  • Low, medium-term
		• Low short term

Operation Stage		

ALC operation	• Noise and vibration from trucks movements;
	• Traffic safety;
	• Waste generation
	  • Non-hazardous: solid wastes and liquid wastes;
	  • Hazardous wastes (used oil, chemicals from laboratory);
	• Air pollution
		• Medium, long-term
		• Medium, long-term
		• High, long-term
		  • High, long-term
		  • Medium, long-term

Project activities	Potential impacts	Level of impacts and duration
	• from traffic fumes and dust; • from operation processing facilities • Increase in temperature due to refrigerators operation	• Medium and low, long-term • Medium, long-term • Low, long-term • Medium, long-term

5.1. Pre-construction stage

140. During pre-construction stage the following aspects may impact on effectiveness of implementation of environmental safeguards during whole project cycle and may lead to non-compliance with requirements:

(i) Designed capacity of waste water treatment plant may not be efficient to treat whole volume of waste water generating during ALC operation stage;
(ii) Improper set up of some ALC's facilities (waste management area, waste water treatment plant and cold storage place) may cause various inconveniences for people living in surrounded settlements;
(iii) no compliance on receiving all required permissions from national authorities;
(iv) improper organization of construction camps and activities;
(v) non-inclusion environmental requirements into the bidding documents and contracts;
(vi) purchase of goods, techniques and equipment which is not comply with with ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009) and national standards on requirements for refrigerators.

141. Water consumption on the stage of project implementation will be 515 m^3/day. In addition to this daily consumption, around 160,000 m^3/year of rain water will be generated from asphalted surface and building's roof will. Two separate technologies for waste water and rain water treatment should ensure capacity of this facilities to treat whole water generating from the ALC. This amount of water will cover demands in water for processing (including production of canned fruits and vegetables, dry fruits and etc.), washing and packaging and drinking water supply for domestic use, cleaning, irrigation of territory.

142. Separate networks for sewage and rainwater are projected, in order not to load the purification station, a situation that would necessarily occur if the network were unitary and the same conduits would conduct sewage and rainwater. With the proposed solution, the rainwater can be directly evacuated to a nearby channel or trough, while the sewage flow will be exclusively to the sewage flow.

143. *Wastewater network*. Formed by corrugated PVC pipe. The end point of the network is expected to drain it in the area reserved for the purification station (waste water treatment plant). Logging wells are included in the network in branch meetings, alignments and grade changes. Valves are also projected to clean the network at the head of the branches. Finally, the network is completed with the connections to the parcels.

144. *Rainwater network.* First of all, it should be noted that the contribution of rainwater from lands outside the site is not expected. For the rainwater network, corrugated PVC ducts are

projected although, as they are the largest diameters, and there is no availability of PVC pipes with diameters greater than 1,000 mm, reinforced concrete ducts are projected for the larger diameters. As in the residual network, record wells are included in branch encounters, alignments and flush changes. The network is completed with the drains for the collection of water in the roadways, and the connections to the plots.

145. For the ***waste water treatment plant*** (WWTP) a compact biological-chemical treatment technology is proposing. The waste water treatment process may consist of several stages presented in Figure 20a.

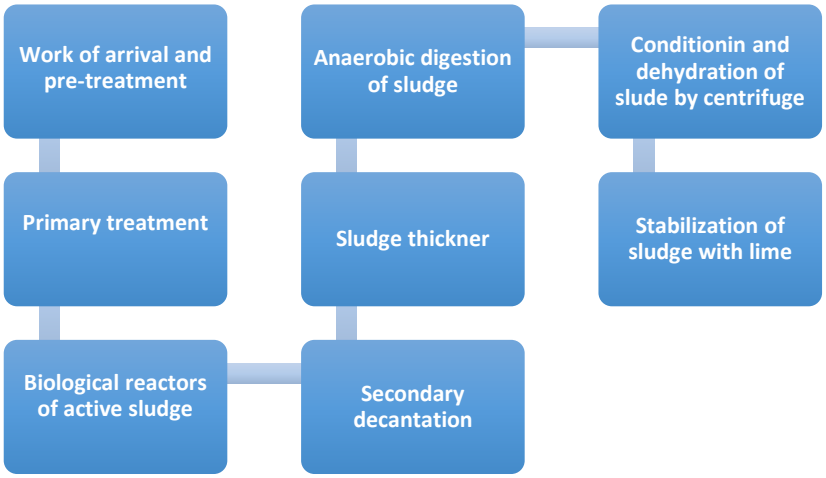


Figure 20a: Waste Water Treatment Process

146. Cleaning technology of water treatment plant will ensure quality of treated water in compliance with national standards[17] on water quality discharging into the water courses. As it stated above, treated water will be discharged into the irrigation canal, therefore, standards for irrigation water courses need to be applied.

147. The design of WWTP should meet the following criteria: minimum design flow - 300 m^3/h, average design flow 515 m^3/h, design tip flow – 1,026 m^3/h, maximum predictable contribution – 1,026 m^3/h, contamination in BOD_5 – 1,104 kg/day, contamination in S.S.T. – 20,520 kg / day.

148. Waste management facilities will be designed to collect, segregate and timely dispose all solid wastes generating during the ALC operation. The development of these facilities will be part of Strategic Plan, Cleaning and Waste Management Plan. Preparation of a cleaning and waste management plan, structured in a series of actions, infrastructure and operations. The tasks that will be taken into account will be, among others, the removal and disposal of solid waste, the cleaning of pavilions, dependencies and road cleaning, and finally the cleaning of the sewage and rainwater network of the ALC. This plan will also establish the cleaning and disinfection protocol of the common areas of the ALC. Development of the Strategic Plan, including waste management, will be under the responsibility of the Capacity Buidling Consultant.

[17] SanR&NRUz No 0088-99 Sanitarian requirements for development and approval of maximum allowed discharges (MAD) of pollutants discharged into the water bodies with waste waters.

149. During the ALC operation the waste management performance which will include solid wastes and sewage, will be under responsibility of the Operation Director. A separate Waste management Department will be responsible for proper implementation of Clean and Waste Management Plan.

150. It is expected that, the location of such facilities as waste water treatment plant close to settlements may generate such negative impact as unpleasant odor which will enhance during windy weather. The same issue may occur with a waste management area.

151. In addition, certain risk of spread of infectious diseases, various insects may happen in case of improper maintenance of the waste management process. Therefore, proposing layout for ALC in Andijan district consider location such facilities on the distance more than 900 meters away from the nearest settlement – RCA Teraktagi and 500 m from dormitory of military base (Figure 21).

152. Close location of cold storages to the living area may raise issue of increasing local temperature due to continuously operation of chillers. The proposing location of ALC facilities ensures no impact on the settlement and military as well (Figure 21).

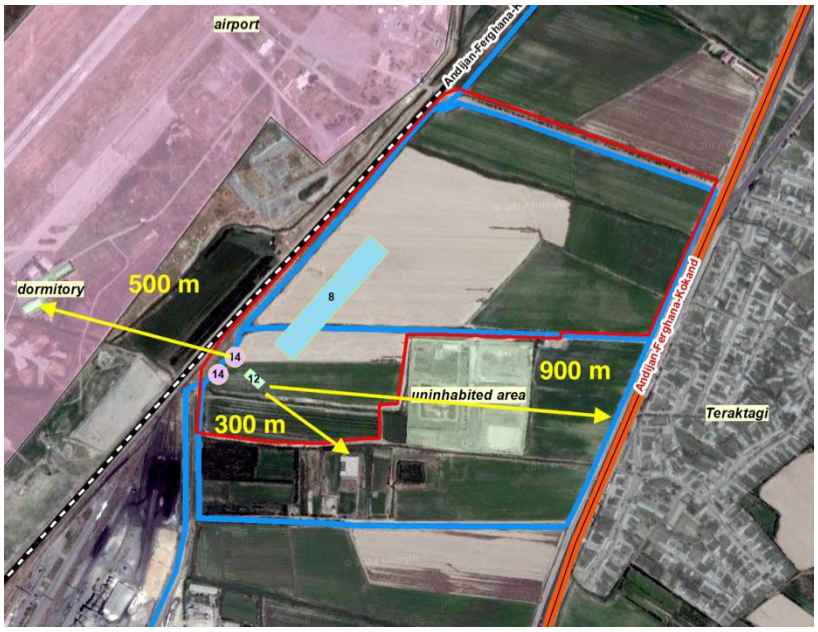


Figure 21: Location of Waste Water Treatment Plant (14), Waste Management Area (12) and Cold Storage Building (8) in ALC in Andijan District

153. In accordance with national legislation, permissions for cutting trees, temporary (for construction camps if any) water use, opening new borrow pits (if any), on waste disposal are needed to be received prior launching of construction works. The full list of required permissions is provided in Chapter 2, Table 1.

154. Resettlement team has calculated number of trees which are needed to be cut and amount of compensation which will be paid to affected people. In accordance with LARP, 57 ha of agricultural land will be acquired, and compensations will be paid to one farmer. There are some trees growing on the north-eastern part of the construction site. If these trees need to be felled,

the compensation need to pay to State Committee on Ecology and Environment protection (SCEEP).

155. In that case prior construction works, PMO's should send a request to local khokimiyat in order to get permission for cutting trees. Hokimiyats will issue a letter to SCEEP to calculate number of trees which have to be cut for the project purposes. SCEEP together with PMO's environmental specialist will calculated number of affected trees and provide cost of compensation for cutting. After transferring payment fund to the SCEEP account, Contractor we be allowed to start construction works.

156. Improper organization of construction camp and activities may lead to non-compliance with environmental and health safety requirements due to poor solid wastes and sewage management, provision of satisfactory living conditions for workers, improper setting storage places of construction materials and temporary storage for excavated soils, traffic management and etc. To minimize this, awarded Contractor has to develop site environmental management plan with requirements indicated in chapter 8, Traffic management plan, Wastes management plan and Construction camps management plans.

157. All environmental requirements are needed to be included into bidding documents and Contractor's contract. EA will ensure inclusion of environmental provision along with EMP into these documents.

158. For the equipment and machinery purchasing within the project, Goods procured for project implementation will be done in compliance with ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

159. It is necessary to ensure that purchased refrigerators does not contain ozone-depleting substances, and their cooling reagents are included in the Attachment # 2 of Resolution of Cabinet Ministries of RUz # 17 dated from 9 January 2018. Moreover, transformers needed for cold storage, processing and other facilities should not contain oil with polychlorinated biphenyl (PCB).

160. For the construction of ALC using of existing bitumen and batching plants located in Andijan province is recommended. However, if Contractor decides to construct and to use own batching or bitumen plants, additional study on dust, noise and vibration impacts needs to be undertaken. The study will be based on required capacity of plants. Moreover, all national procedures on conduction an environmental impact assessment, receiving permissions on water use and wastewater discharges and solid wastes disposal need to be received prior commissioning of these plants.

161. Summarizing anticipating impacts on the pre-construction stage, the following measures are needed to be undertaken:

- Project Supervision Consultant has to design waste water management plant with capacity no less than 515 m^3/day. Selected water treatment technology has to ensure compliance of treated water with national standards and requirements indicated in para 146-148. If ALC's water consumption increases during the project detail design stage, the waste water treatment plant's capacity needs to be revised accordingly;
- Training and Capacity Building Consultant will develop waste management plan, which will include among others, the removal and disposal of solid waste, the cleaning of pavilions, dependencies and road cleaning, and finally the cleaning of

the sewage and rainwater network of the ALC. This plan will also establish the cleaning and disinfection protocol of the common areas of the ALC.

- Prior commissioning of construction works on waste water treatment plant, additional study for noise, vibration and air pollution needs to be undertaken and national environmental assessment needs to be conducted along with receiving necessary permissions as indicated in Chapter 2, Table 1.
- If Contractor decides to use own batching or bitumen plants, a national environmental environmental assessment needs to be conducted prior commissioning of construction works;
- The design of batching or bitumen plants need to ensure that during plants operation dust level in the Teraktagi settlement will not exceed baseline parameters, especially during the windy weather;
- New additional waste water treatment facilities need be constructed for the next stage of ALC construction;
- If any changes into the ALC layout takes place during project detail design stage, make sure that waste management area, waste water treatment plant and cold storage places are located away from settlements (no close than 100 meters);
- All permissions, indicated in Table 1, Chapter 2 need to be received and compensation payments for affected people need to be done prior commencement of construction works;
- Within 30 days after contract award and prior to commencing any physical works, Site-specific Environmental Management plans (SSEMPs) as well as Topic Specific Management Plans (Waste Management Plan, Traffic management Plan, Construction Camps Management Plan and Occupational Health and Safety Plan (OHS Plan)) have to be developed by the Contractor and they will be endorsed by PMC before submission to PMO for approval. Traffic management Plan has to be submitted local traffic authorities prior to mobilization;
- All environmental requirements are needed to be included into bidding documents and Contractor's contractor;
- Bids evaluation has to be done with consideration of: capacity of bidders to meet EMPs requirements, proposing adequate budget efficient for implementation EMP, existence of good practice in environmental performance within other similar projects.

162. If any changes in the project design will take place, the IEE has to be updated accordingly by PMO in assistance with of PSC international environmental specialist.

163. An Environmental Management Plan (EMP) presented in Chapter 8 provides information when these measures need to be done and who is responsible for their implementation.

5.2. Construction stage

164. In accordance with plan, construction works will be implemented during period 2021-2023.[18]

165. The construction of ALC will consist of the following stages:

- Site preparation – removing of top soil and site planning;

[18] FS for Andijan ALC, Table 2.

- Main construction works – construction of pavilions and supporting facilities, external communal networks and etc.;
- Construction of the roads and landscaping;
- Installation of the equipment.

166. It is expected, that these stages will be implemented in sequence, therefore anticipated impacts are reviewed in the same order. In case, if some stages will be implemented simultaneously, the mitigation measures from previous stage need to be implemented also.

5.2.1 Physical resources

Impact on air quality

Site preparation stage

167. During the site preparation top soil needs to be removed and surface leveled. It is expected, that surface may also need to be compacted to bring it in compliance with construction standards. At this stage pollutants emissions will be discharged by machinery working at the site - excavators, bulldozers and compactors. Moreover, emissions will be discharged by trucks carrying wastes from construction site.

168. The impact will intensify if Contractor use equipment and vehicles with improper technical characteristics or in poor condition. Moreover, burning of construction and domestic wastes will also cause air pollution.

169. Special attention needs to be paid to dust generation. It will occur during machinery operation, trucks movement and temporary storage of excavated soil. Besides adverse impact on people health, living in surrounded area, dust pollution during the windy weather may affect on visibility on the highway Andijan-Asaka-Ferghana.

170. If Contractor decides to construct batching or bitumen plants, location of plants need to be selected in the way, minimizing dust impact on settlements and military base. Moreover, a Contractor will be responsible for proper implementation of all mitigation measures included in updated IEE.

Main Construction activities

171. During this stage all main facilities such as wholesales pavilions, cold storage buildings, waste water treatment plants, customs service building, administrative buildings, buildings for support services will be constructed. All external communication will be installed also during this stage.

172. The main construction activities will consist of: digging of foundation pits for buildings, construction of buildings itself, external network for communication. These works they can be conducted in parallel, if they not intersect with each other. As per engineering team's estimation of soil structure in the project area, a depth of foundation pits will be no more than 2.5 meters.

173. On this stage type impacts on air quality will be similar to the previous stage. However, magnitude will be noticeable bigger. Significant amount of dust will be generated during excavation works on digging foundation pits, soil loading and unloading and trucks movement.

174. Soil excavated after land leveling does not belong to highly fertilized soil, therefore, excavated soil could be disposed to the places, indicated by local authorities (hokimiyats and Committee on Ecology and Environment protection (SCEEP)). To minimize volume of transported soil and, as consequences, dust generation, excavated soil could be used for site leveling and creation a necessary natural slope for rain water collection during operation of ALC. The surplus soil could be disposed as indicated above.

175. Soil transportation from the construction site and to the soil disposal places may also generate dust, therefore, all trucks transporting soil or construction materials have to be covered by canvas or other material. In addition, wheels of trucks leaving construction sites have to be cleaned in order to avoid spread of soil residual on the highway.

176. Another possible impact may occur due to usage of bitumen for foundation pits for waterproof purposes. To avoid pollution by harmful combustion products of bitumen it is recommended to use high density polyethylene.

Construction of internal roads and landscaping

177. During this stage asphalting of access and internal roads, parking areas, greening of territory will be implemented. Impacts on the air quality will be similar to impacts identified during site leveling stage. Therefore, the same mitigation measures are recommended.

Installation of the equipment

178. This activity could be implemented in parallel with landscaping process. Impact on air quality will be insignificant and caused by trucks movement, installation activities. Emissions of dust is not expecting during this stage.

179. Requirements for machinery maintenance and waste management during all construction stages will be the same.

180. Based on above described, the following mitigation measures need to be implemented during construction:

Mitigation measures:

- apply watering of construction sites, access and internal roads;
- cover transported bulk materials and excavated soil;
- locate temporary soil storage piles away from south-east part of the site in order to avoid dust pollution during windy weather;
- as much as possible, as per engineering team design, use excavated soil (not top soil) for backfilling tranches for communication and infrastructure network, foundation pits, site leveling to create necessary natural slope for rainwater run-off collection during operation of ALC;
- use topsoil for landscaping at the last stage of ALC construction. Distribute non-used topsoil among farmers/householders as per local authority decision;
- for waterproofing of building foundation do not use bitumen. It is recommended to use high density polyethylene or its analog;

- all vehicles and techniques must comply with technical requirements and have to pass regular inspection as indicated into the national standards[19];
- prohibit open burning of solid wastes generated particularly from labor camps and during land leveling activities;
- minimize site leveling works during period of the high winds when winds could nevertheless direct dust towards adjacent communities;
- if minimization is impossible and measurements of dust level shows increasing baseline level of dust on 3 mg/m^3 in the monitoring points indicated in Environmental Monitoring Plan (Chapter 8.2), it is necessary to install dust protection screen as indicated on Figure 22.

Figure 22: Recommended Dust Monitoring Points and Location of Dust Protection Screen

Noise impact

Site preparation stage

181. The maximum amount of trucks coming in and from construction site is expecting during earth works. Approximately amount of earth which will be excavated for the construction of ALC's building and facilities' foundation was calculated. The calculation was done by multiplying of total square under all buildings on the territory of the ALC (72,109 m^2) on depth of foundation (2.5 m). Based on calculation, maximum amount of earth which will be excavated, transported and disposed on the landfill is 180,273 m^3. Some part of the excavated soil will be deposed for backfilling, but the main part will need to be disposed.

182. In average, one excavator could dig 600-800 m^3 of soil during the one shift (8 hours). One truck could carry around 15 m^3 of soil per one trip, which means that 80-107 trucks will be able to take out the earth excavated by two excavators during one shift. If more excavators will work on the construction site at the same time, it means that more trucks will operate on the construction site.

[19] "O'z DSt 1057:2004 Vehicles. Safety requirements for technical conditions" and "O'z DSt 1058:2004 Vehicles. Technical inspection. Method of control".

183. Noise pollution and excess norms for vibration may occur mainly during operation of machinery and trucks movement. During the land leveling process the noise will be generated by excavator, bulldozers, compactor (if necessary) and trucks used for wastes and materials transportation.

184. The main receptor of noise on project site is inhabitants of settlement Teraktagi and workers of office. The distance between border of project site (P2 and P3) and settlement are around 60 and 75 meters, more than 300 meters until office and 500 meters until military dormitory. There are no any sensitive receptors, such as school, hospitals or kindergarten in a radius of up to 1 km from project site.

185. To assess an anticipated noise level during these types of works calculations was done based on existing information about operation of various equipment. Level of noise generated by various equipment was used based on existing standards.

Table 7: Noise level form various techniques (at the distance 50 feet[20])[21]

Noise source	Equivalent noise level, dB
Excavator	81
Dozer (Bulldozer)	82
Compactor (ground)	83

Source: WSDOT measured data in FHWA's Roadway Construction Noise Mode Database (2005).

186. As a rule, noise caused by moving equipment is reduced at some distance. Such reduction has logarithmic properties. In case of noise caused by construction activities, noise spread pattern from the noise point is used, that can be determined as: Noise $level_1$ - Noise $level_2$ = 20 log r_2/r_1. Calculation of noise propagation from these machineries at the different distances is presented in Table 8.

Table 8: Noise Levels at the Various Distances

Distance	Equivalent noise level (maximum), dB		
	Excavator (81)	Dozer (82)	Compactor (83)
20	78	79	80
60	66	67	68
75	63.7	64.7	65.7
100	60	61	62
300	48.6	50	50.6

Source: PPTA's Consultants, 2018.

187. As shown in the Table 8, at the distances 60 and 75 meters from border of construction site, the noise level is below 70 dB (SanPiN #0267, 2007) for the area adjusted to living houses (Table 3). Moreover, anticipated noise level from construction activities will be below ambient noise level at these points – 75 dB for day time (Table 4).

188. If several machineries will work at one time during the land leveling, calculation of total noise level generating during this stage will be based on the Rules on Decibel Addition.[22]

[20] One feet is equivalent to 0.348 meters, 50 feet is 15.2 meters.
[21] Part Two – Construction noise impact assessment, Table 7-4.
[22] Part Two – Construction noise impact assessment, Chapter 7.1.3.4.

Table 9: Rules for Combining Noise Level

When two decibel values differ by:	Add the following to the higher decibel value:
0 or 1 dB	3 dB
2 or 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0 dB

Source: USDOT (1995).

189. The difference between two lowest noise equipment for all construction equipment operating together, the two lowest level equipment were added using rules indicated in Table 9, then thirds noise level was added to previous results using the same rules.

190. Two machineries with the lowest noise level were added: 82-81=1 dB. Therefore, 3 dB was added to 82, resulting in a combined noise level of 85 dB. Add this value to the next noise level using Table 4: 85-83 is a difference of 2 dB, therefore 2 dB is added to 83 dB, resulting in a total noise level for all equipment combined of 85 dB.

191. Noise level propagation for the combined noise level showed that at the distance on 60 and 75 m noise level will slightly exceed standards on 65 dB.

Table 10: Rules for Combining Noise Level

Distance	Equivalent noise level (maximum), dB
20	82
30	77.6
60	70
75	67.7
100	64.5
300	53

Source: PPTA's Consultants, 2018.

192. However, anticipating noise level during this stage will be lower than ambient noise. As per baseline measurements, current equivalent noise level during day time is 75 dB and for night time is 73 dB.

Main Construction activities

193. During this stage, various techniques and machinery will work in the same time. As per existing practice, the following machinery will be used during this stage: Excavators, bulldozer (dozer), air compressor, truck crane, assembly crane, compactor, vibrators for concrete compaction. Maximum noise levels for this equipment are presented in Table 11.

Table 11: Noise Level Form Various Techniques (at the distance 50 feet[23])[24]

Noise source	Equivalent noise level, dB
Excavator	81
Dozer (Bulldozer)	82

[23] One feet is equivalent to 0.348 meters, 25 feet is 8.7 meters.
[24] Part Two – Construction noise impact assessment, Table 7-4.

Compactor (ground)	83
Air Compressor	81
Truck (mobile) crane	83
Vibrator for concrete compaction	76
Backhoe	80
Truck	88
Hydraulic hammer	100
Pilling machinery	97
Hydraulic concrete saw	102

Source: WSDOT measured data in FHWA's Roadway Construction Noise Mode Database (2005).

194. Using the same approach described in the para 191, it was calculated that maximum level from construction equipment will reach 102 dB. Three noisier equipment were selected – pilling machinery, hydraulic hammer and trucks. Hydraulic concrete saw will be used mostly inside of building, therefore its impact on houses was not considered. Noise propagation exercise showed the anticipated noise level during (Table 12) conduction the main works. The table also provided data on reducing noise level due to fence (2 meters height) around entire the project site and surface factor. Fence will decrease noise level on 7 dB[25]. In addition to this, surface factor (area between construction site and living houses is mostly asphalted) will reduce noise at least on 1 dB.

Table 12: Rules for Combining Noise Level

Distance, m	Equivalent noise level (maximum), dB	Decreasing of noise level due to 2 meter fence(s), on dB	Equivalent noise level with 2 meter fence, dB	Ambient noise level, dB (day time)
20	99	7	92	75
30	94.6	7	88	75
60	87	6+1	80	75
75	85	6+1	78	75
180	75	6+1	67	75
250	70	6+1	74	75

Source: PPTA's consultants, 2018.

195. As shown in the table 12, noise level from several machinery working in the same time, will reach 80 dB and 78 dB in front of living houses of Teraktagi settlements. Since ambient noise level is 75 dB, working several machineries at the distance far than 75 meters, will not lead to increasing anticipating noise more than on 3 dB. However, several machineries working at the same time on the distance close than 75 meters will lead to increasing ambient Nosie level more than on 3 dB. Therefore, it is recommended during construction works do not use several machineries at the same time within the distance closer than 75 meters to the west border of the construction site.

196. For the stages **of construction of internal roads and landscaping, access road and during installation of equipment** the same requirements need to be applied.

197. Nevertheless, noise level monitoring needs to be implemented on the construction site on the regular base in the points, indicated on the Figure 22 in accordance with the methodology indicated into the Environmental Monitoring Plan (Chapter 8, Table 18). In case of exceeding

[25] CRN 2.01.08 Noise protection, Table 29.

noise level during construction phase on 3 dB in comparison with baseline situation, additional mitigation measures, such as construction acoustic screen could be applied.

Vibration impact

198. Vibration impact during construction stage could be caused by the same machinery. The level of vibration and its propagation within a distance was calculated in accordance with methodology indicated in Transportation and Construction Vibration Guidance Manual (2013).

199. The Manual with reference to Transit Noise and Vibration Impact Assessment (Federal Transit Administration 2006), provides information on vibration level from different construction equipment (Table 13). The table does not provide data on mobile and assembles cranes since vibration level is not significant.

Table 13: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference in PPV at 25 feet (in/sec)
Excavator (Clam shovel drop)	0.202
Large bulldozer	0.089
Small bulldozer	0.003
Loaded trucks	0.076

Source: Federal Transit Administration 1995 (except Hanson 2001 for vibratory rollers).

200. Using these source levels, vibration from this equipment can be estimated by the following formula:

$$PPV_{eqp} = PPV_{Ref}(\frac{25}{D})^n$$

Where:

PPV_{Ref} = reference PPV at 25 ft. (Table 6);

D = distance from equipment to the receiver in ft;

n = 1.4 (the value related to the attenuation rate through ground).

201. Values of vibration level calculated in accordance with this formula are presented in Table 14.

Table 14: Calculation of Vibration from Equipment

Distance	Vibration from equipment							
	Large bulldozer		Small bulldozer		Loaded trucks		Excavator	
	in PPV (in/sec)	in dB	in PPV (in/sec)	dB	in PPV (in/sec)	dB	in PPV (in/sec)	dB
20	0.12	67	0.004	37	0.1	66	0.28	74
30	0.07	63	0.002	34	0.05	62	0.16	71
50	0.03	58	0.001	29	0.028	57	0.08	65

Source: PPTA's consultants, 2018.

202. National standards for vibration level in residential houses are provided in Sanitarian Norms and Rules (SNR) № 0146-04 "Design of the living houses in climatic conditions of Uzbekistan". For living houses the standards is 67 dB for night time and 72 dB for day time with frequency in 37 and 61 Hz and for night time is 67 dB.

Table 15: National Standards for Vibration

Period	Permanent vibration, dB
Day time	72
Night time	67

203. The standards are provided in "Transportation and Construction Vibration Guidance Manual" (2013). The Manual provides two types of limits for vibration level – for "frequent events" and "infrequent events". The Manual defines that "Frequent events" (continuous) is defined as more than 70 events per day and "Infrequent events" (single event) is defined as fewer than 70. As showed calculation of maximum amount of trucks which will move to and from site will be more than 80. Therefore, more stringent (lower threshold) is applied for the current assessment for vibration impact. For example, a threshold for residential buildings with plastered walls/... is 0.2 in/s for continuous vibration and for single event condition is 0.5 in/s.

204. The Table 16 presents maximum continuous vibration level for preventing damages for different type of buildings. This data could be used as thresholds for both phases – construction and operation for structural integrity of buildings/houses.

Table 16: Maximum Continuous Vibration Levels for Preventing Damage (mm/s)

Description of building type	AASHTO (1990)			SAS (1992)		
	mm/s	in/s	dB*	mm/s	in/s	dB*
Historic sites or other critical locations	2.5	0.09	94	2.5	0.09	94
Residential buildings with plastered walls / Building with foundation walls and floors in concrete, wooden ceilings and walls in masonry	5.1-7.6	0.2-0.29	100-104	5.1	0.2	100
Residential buildings in good repair/ Building with foundation walls and floors in concrete, walls in concrete or masonry	10.2-12.7	0.4-0.49	106-108	7.6	0.29	100
Engineered structures without plaster / Buildings in steel or reinforced concrete	25.4-38.1	0.99-1.4	114-118	12.7	0.49	108

AASHTO = American Association of State Highway and Transportation Officials, SAS = Swiss Association of Standardization.
Source: California Department of Transportation (2013), US Transportation Research Board (2012).
* Converting into dB was done based on formula provided in para 57.

205. To convert vibration level presented in dB into vibration velocity presented in mm/s and vice versa the following formulas were used:[26]

$$V_{dB} = 20 * Lg10(V) + 86,$$
$$V = 10^{(V_{dB}-86)/20},$$

where

V_{dB} – vibration level in dB, and V – vibration velocity in mm/s

206. As showed results of calculation of vibration level (Table 14), vibration from construction activities on this stage will not impact on people living on surrounded area and structures since it is below standard in 72 dB for day time.

[26] http://vibrocenter.ru/vibroacc.htm

207. Anticipated vibration levels at the distances 65 meter is below standard. It will not also impact on residential building as well, since the highest vibration level will not exceed 0.2 in/s or 100 dB (Table 16).

Main Construction activities and construction of access road

208. Data on vibration from equipment generating vibration during these stages of construction activities are presented in Table 17. For completion of construction of access road (asphalting) vibration roller will be used as well.

Table 17: Vibration Level from Construction Equipment

Vibration source	Vibration level, in/s
Excavator	0.202
Dozer (Bulldozer) large	0.089
Compactor (ground) (vibration roller)	0.21
Loaded trucks	0.076
Vibrator for concrete compaction	0.21
Pilling machinery	0.734
Backhoe	0.089

Source: FTA, 2006.

209. Calculation of vibration level at the different distance are presented in table 18.

Table 18: Vibration Level at the Different Distance

Distance	Vibration from equipment from									
	Large bulldozer		Pilling machinery		Excavator		Vibration for concrete compaction		Compactor (vibration roller)	
	in/s	dB	in/s	dB	in/s	dB	in/s	dB	in/s	dB
20	0.12	68	1.00	86	0.28	75	0.29	75	0.29	75
30	0.07	63	0.57	81	0.16	70	0.16	70	0.16	70
50	0.03	56	0.30	76	0.08	64	0.08	64	0.08	64
60	0.03	56	0.21	72	0.06	62	0.06	62	0.06	62

Source: PPTA's consultants, 2018.

210. Therefore, vibration level, generating during construction works will not exceed standards for people (Table 14 – 72 dB) at the distance 65 and 70 m. It will also not exceed standard for buildings and structures Table 16 (0.2 in/s). For integrity of building located in the distance 30-40 meters from construction site, usage of piling machinery on the distance closer than 60 meters may have some risk. However, pilling works will be needed for construction pavilions which will be located on the distance more than 100 meters (Figure 3), which means that vibration from construction site will not impact on that building as well. Even calculation of vibration level showed that the vibration level will not exceed the level which may impact on people's health and houses integrity, it is recommended to conduct a visual observation of the farmer's temporary house before commissioning construction works and on monthly base during works of pilling machinery. In case of any cracks or damages mitigation measures need to be applied:[27] pre-drilling, using alternatives non-impact drivers, using cast-in-place or auger cast piles and etc.

[27] List of mitigation measures indicated in "Transportation and Construction Vibration Guidance Manual", 2013, Chpater 8.

Mitigation measures:

211. The following measures need to be implemented to avoid noise and vibration impacts on project sites located within settlements:

- schedule land leveling so as to minimize the multiple use of the noisiest equipment on the site;
- do not use several machineries at the same time within the distance closer than 75 meters to the west border of the construction site
- use of Personal Protective Equipment (PPE) by workers involving during construction stage in the sites where noise level will exceed 80 dB as per national regulation;
- inform population about anticipated works;
- schedule construction works between 8 am and 7 pm. In case of extension working hours, inform community (Teraktagi RCAs) in advance;
- conduct visual observation of temporary faced to construction site on integrity
- Nevertheless, noise level monitoring needs to be implemented on the regular base in the points, indicated on the Figure 22 in accordance with the methodology indicated into the Environmental Monitoring Plan (Chapter 8, Table 18). In case of exceeding noise level during construction phase on 3 dB in comparison with baseline situation, additional mitigation measures, such as construction acoustic screen could be applied;
- conduct a visual observation of the farmer's temporary house before commissioning construction works and on monthly base during works of pilling machinery. In case of any cracks or damages mitigation measures need to be applied:[28] pre-drilling, using alternatives non-impact drivers, using cast-in-place or auger cast piles and etc.

212. Therefore, impacts on air quality, noise and vibration will be temporary and it could be mitigated by implementation of recommended measures.

Impact on water resources

213. Impacts on water resources will be similar during all stages of construction activities. The surface water may be polluted due to improper storage of the excavated soil, poor management of construction camps, and improper storage of construction materials, leakage of fuel and lubricates from construction machinery, washing of vehicles and techniques without proper treatment.

214. There are three water courses on the territory adjusted to the construction site: (i) permanent drainage canal on the north-west part of the site, and (ii) temporary small canal on the south east, and (iii) drainage canal on in the middle of the construction site (Figure 23).

[28] List of mitigation measures indicated in "Transportation and Construction Vibration Guidance Manual", 2013, Chpater 8.

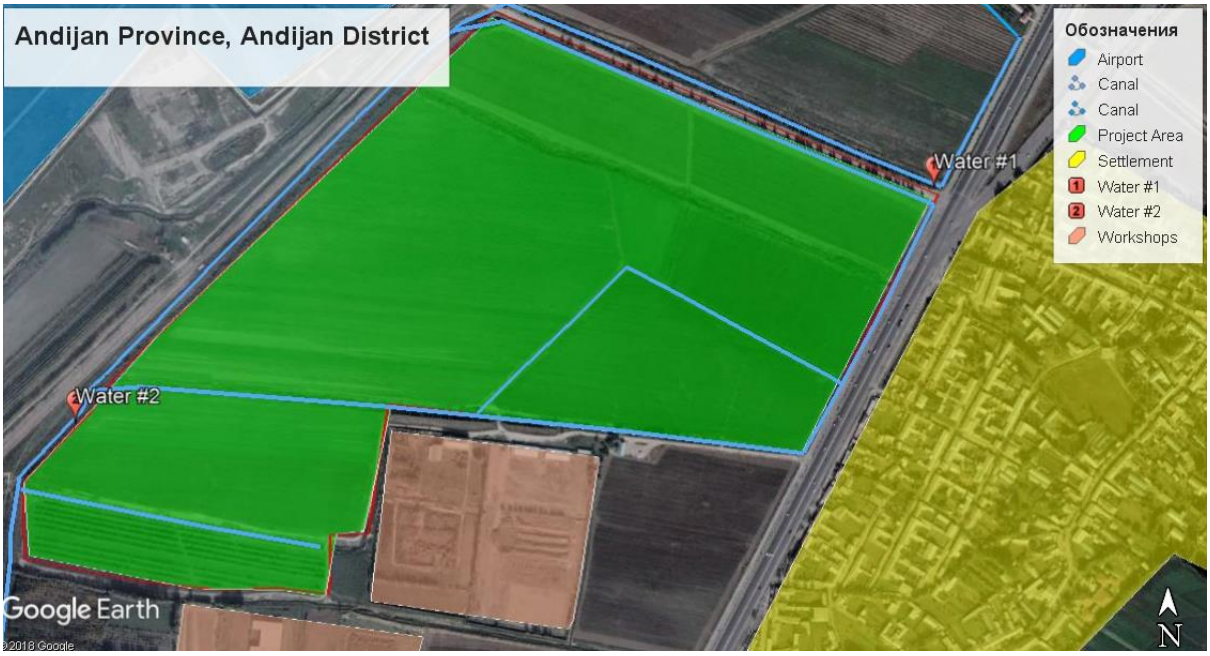


Figure 23: Watercourses and Monitoring Points for Construction Site

215. To avoid pollution of water courses by excavated soil through flushing it into the canals, excavated top soil needs to be storage away from water courses (at least 20 meters). Installation of temporary fence for construction period as per national legislation,[29] will minimize water pollution as well.

216. To avoid water pollution from construction camps proper waste management practice needs to be implemented. The detail assessment of waste management during construction stage and proposed mitigation measures are provided in the following paras.

217. Washing machinery and trucks in the places not equipped for these purposes will lead to soil pollution and as consequences, to pollution of ground and surface water. Places for washing wheels and cars have to be equipped with internal waste water collection network and primary water treatment facilities.

218. Construction activities will not lead to pollution of drinking water used in surrounded area. Currently population use ground water for drinking. However, in accordance with ongoing state program, all settlements in Andijan district will be connected to centralized water supply system by the end of 2019. Taking in account that construction works will start in 2021, ground water will not be used for dirking purposes by that time.

219. Groundwater table level within the Project zone is 3-5 m and during irrigation season it could raise up to 2 meters. It is recommended that all works related to digging on the depth more than 1.5 meters need to be conducted during non-irrigation season. The irrigation season in that region is May-August. If this period could not be avoided, usage of standard technology for construction in areas with high water logging needs to be applied – pumping water into the nearest drainage canal.

[29] Norms and rules of civil construction # 3.01.01-3 “Organization of construction works.”

220. Implementation of the following measures mitigation will avoid deterioration of water quality.

Mitigation measures:

- Contractor should not start construction works without obtaining permission from State Committee on Ecology and Environment protection (SCEEP) on water use and discharge of waste waters;
- Make sure that temporary fence has been built before construction works started;
- Excavated top soil needs to be storage away from water courses (at least 20 meters);
- Washing of machinery, equipment and trucks need to be done only in specially designated places equipped with waste water collection and primary treatment facilities (oil traps, sedimentation tanks and etc.);
- Store all toxic and hazardous materials required for construction and fuel at secure and managed sites located away from the water courses;
- Maintenance of all vehicles and equipment in operable condition ensuring no undue leakage of fuel and oil on the ground;
- Organize sanitation arrangements at worksites or any accommodation facilities provided for workers' ensuring that no raw sewage is released into the drain or watercourses;
- all works related to digging on the depth more than 1.5 meters need to be conducted during non-irrigation season. The irrigation season in that region is May-August.
- If this period could not be avoided, use standards technology for construction in areas with high water logging: pumping water into the nearest drainage canal.
- Conduct monitoring of water quality in the points indicated on the Figure 23 (before site and after site) on the monthly base by ingredients indicated in the Environmental Monitoring Plan (Chapter 8).

221. Potential impact arises from maintenance of contractors' camps, transport, maintenance of vehicles and handling and storage of lubricants and fuel. The required provisions for construction camps are described in the subsections describing impacts on soil quality and waste management.

Impact on soil

222. The main anticipated impacts on soil during site leveling stage will be: disturbance or loss of top soil, its compaction and pollution. For site leveling purposes 30 cm depth soil will be excavated and storage until final construction stage. After completion construction of the main ALC pavilions and facilities, this soil will be re-used for landscaping.

223. Since the most part of ALC land will be used under the buildings, parking area and other facilities, certain part of excavated soil will remain. That part could be distributed among farmers or households for crop production.

224. During the main construction significant amount of soil will be excavated for foundation of building.

225. The movement of equipment and the temporary storage of materials on the ground during the construction may lead to compaction of the soil. This compaction will take place in the area affected by the construction works, in its vicinity.

226. Inert materials will be needed for construction of the ALC's internal and access roads. In that case, Contractor is allowed to use only authorized carriers. In case of necessity to open new carriers all relevant permissions from State Committee on Geology need to be received prior staring using new carriers.

227. Oil spills generating during refueling and maintenance of machinery may pollute soil and ground water by lubricants, used oil and other chemicals.

228. To minimize this impact on soil quality the following measures shall be implemented:

Mitigation measures:

- The top soil of about 30 cm depth shall be removed and stored separately during excavation work, and after completion of the main construction the same soil shall be replaced on the top, in unpaved areas;
- The surpluses of top soil need to be distributed among farmers and householders as per decision of local government authorities and State Committee on Ecology and Environment protection (SCEEP);
- To minimize soil compaction, movement of all type techniques will be allowed only through agreed assess roads;
- Contractors will be required to use only authorized carriers with getting all necessary permissions per respective national legislation.

229. Pollution of soil during construction phase maybe caused by improper handling of fuel and oil during refueling and poor waste management which are accessed in the next chapters.

Management of hazardous substances

230. Oil, fuel, and chemicals (including bitumen, concrete) are substances which are hazardous to human health and environment. During construction works they have to be stored properly in correctly labeled containers. Bitumen, fuel and oil need to be storage in tanks with lined bunds to contain spillage. Proper storage and handling of hazardous materials reduces wastage and reduces risks of spillages which could lead to pollution of ground water, soils and surface water. Construction site should have spill contingency plan.

Waste management

Hazardous wastes

231. During construction phase hazardous wastes (used oil and batteries, fuel and bitumen residuals) will be generated during operation and maintenance of machinery. In case of improper handling and dispose of such materials it will lead to pollution of environment and they are hazardous to human health.

Mitigation measures:

- Used oil shall be collected into containers placed at the concreted sites and disposed to national oil companies designated for accepting and treatment of used oils;[30]
- Refueling vehicles and oil replacement have to be conducted in the special designated and properly equipped places. Such places have to be organized in the way avoiding releasing or leakage of oil on the ground or water courses. Emergency facilities have to be at the place for elimination of accident of oil spills;
- Used batteries have to be collected separately and transferred to the local branches "Cvetmet" for further disposal.

Non-hazardous wastes

Municipal wastes

232. Municipal solid wastes and waste waters will be generated at the construction and camp sites. Mainly it will be rubbish, plastic or glass bottles, waste food, organic wastes and etc. Improper wastes management may cause the spread of infectious diseases, emergence of insects and parasites in construction camp sites. In addition, it may lead to pollution of water courses and soil, conflicts with local population.

233. For disposal of municipal wastes, the Contractor will receive permit on waste disposal from State Committee on Ecology and Environment protection (SCEEP) and will conclude agreements with relevant national agencies on their disposal for whole construction period. All wastes have to be disposed only in the areas indicated into the permits.

234. Sewage and "grey" water (water from bathroom and canteens) generated at site offices and work camp should be appropriated managed, so it does not produce odors or pollute water courses. There is no centralized sewage system in construction site. Therefore, Contractor is required to provide his own on-site waste water treatment facilities such as septic tanks. For disposal sewage from septic tanks Contractor will have also to get permit from State Committee on Ecology and Environment protection (SCEEP)and conclude agreement with national agency "Toza Hudud". Direct discharge of untreated sewage or oily water in surface water courses will be prohibited.

Construction wastes

235. Construction wastes generating during leveling stage will be mainly residuals of plants. There is some probability that stones will be founded during this type of works. All these wastes could be disposed on the municipal landfills indicated by local agency "Toza hudud" which is under SCEEP.

236. During the main works, construction of internal and access roads construction wastes will consist of packing materials, welding rods, broken bricks and etc. Therefore, the following mitigation measures need to be applied for whole construction site period.

[30] Resolution of Cabinet Ministries of RUz # 258 "On collection, storage and further disposal of used technical oil" dated from 4 September 2012

Mitigation measures:

- Segregate municipal on recyclable and non-recyclable;
- Obtain permit on disposal all types of wastes
- Sell recyclable wastes to relevant local waste processing organizations (paper, glasses, plastic) and timely dispose of non-recyclable wastes to the landfill, determinate by local hokimiyats;
- Provide hydro isolated septic tank for collecting waste waters at the construction camp sites and bio toilets for workers at the construction sites and timely dispose of waste waters to the local waste water treatment plants;
- Prohibit burning of all types of wastes;
- Prohibit discharge of sewage or oily water in surface water courses or soil;
- Create a safe (sheltered with concrete foundation) storage facility.

Biological resources

237. Project site is located on the agricultural lands used for growing cotton and wheat. There are around 120 trees growing from both sides of the road connecting highway Andijan-Asaka and military base (Figure 24). There is a possibility that these trees could be felled for ALC construction purposes. The Contractor should try to organize his activity in a way with avoiding trees lost. However, if avoiding is impossible, before cutting trees compensation payment will be paid by Contractor to the State Committee on Ecology and Environment Protection (SCEEP).

238. Prior commission of construction works, land owner - farmer will be notified about planning activities and will be allowed to remove residual of cotton and wheat which are used as fuel by local population.

Figure 24: Juniper Trees Growing along the road Connecting Highway with Military Base and Cotton Field

239. 57 ha of cotton and wheat fields will be acquired in accordance with national legislation and ADB SPS (2009) requirements. LARP prepared for this site indicates amount of compensation and owners need to be paid for acquiring of this land.

240. The project site is located on the agriculture lands without representatives of wild animals. Nevertheless, burning of the plants' residual during project cleaning stage will be prohibited.

241. There is no fish in the water courses next to the construction sites, since level of water in the canal and drains significantly change during the year. The drain serves as discharge point of

ground water from the fields. Small water course on the south-east part of the site is used as irrigation canal during vegetation period.

242. To mitigate adverse impact on vegetation and wildlife and to comply with national requirements the following measures should be apply:

Mitigation measures:

- Clear mark project site in order to avoid unnecessary cutting of trees;
- Conduct joint revision of the project sites with representatives of inspectors from Andijan district Goskompriroda to identify a number of cutting trees to calculate compensations;
- Pay compensation for felled trees losses as indicated CMR # 290 (2014);
- During land cleaning from plant residual don not use chemicals and do not burn vegetation.

Impacts on land use

243. As it was noted in the previous paras, 57 ha of agricultural land will be acquired and transferred to into the industrial lands for construction of ALC. No more land will be acquired for extension of the road. All works will be conducted within RoW for the highway.

244. Withdrawing lands are classified as an agricultural land. However, considering expecting financial and social benefits from construction of ALC, these losses will be negligible.

Socio-economic resources

245. Construction of the ALC will have positive effect and may have some negative impacts on socio-economic resources during construction works.

246. Personnel with different qualifications will require for construction works, and local population will be hired for some of activities, which means creation of new jobs. Moreover, indirect services will be demanded to provide needs for housing, catering, petrol stations and etc.

247. These temporary impacts will contribute overall project positive impact – economical benefits from the ALC operation. Along with increasing incomes to the provincial budget, around 1,150 people will get new jobs, from which around 30 percent will be females.

248. Some temporary difficulties for traffic due to construction of extension of highway Tashkent-Andijan will occur during construction phase. Technical specifications for this activity will be endorsed by national road agency. The technical specifications include a Traffic Management Plan for the construction period.

249. It is expected, that for construction of the ACL some specialists will come from abroad and this may cause conflict situations with local population in term of differences in cultures. It would be necessary to introduce workers from abroad with local culture and traditions in order to avoid conflicts.

250. Public consultation participants raised question about possibility of use local population for the ALC construction and further operation.

251. The following measures need to be undertaken to minimize or compensate this impact:

Mitigation measures

- inform community in advance about planning works;
- for construction works which do not require specific skills, hire local population as much as possible;
- conduct explanatory work among workers about local culture and traditions.

Health and safety issues

252. Besides impacts on air, water and soil quality, described in previous chapters, certain risks related to community health and safety, for workers in campsites may occur during the construction phase.

For community

253. Inadequate lighting and fencing of construction sites inside or close to settlement areas can be dangerous for pedestrians and vehicles especially during the night time. Increasing of traffic due to trucks and vehicles movements to construction sites, temporary closing of access roads during construction may cause inconveniences for local population as well.

254. Untimely and inefficient disposal of solid waste and improper sanitary conditions generated by the construction workers at construction sites and labor camps may cause pollution of the surrounding environment and affect the health of local people. There are could also be some social problems due to irresponsible behavior of the outside work force such as gambling, alcoholism and disrespect to local people and their culture.

255. Cultural interference workers with local communities may cause HIV and sexually communicable diseases (STD) spreading in case of law awareness about these diseases among workers and community.

256. The following measures need to be undertaken to minimize these impacts:

Mitigation measures

- Inform population of the Teraktagi RCAs about planning works in advance;
- Together with traffic police authority and road agency Contractor should develop a Traffic Management Plans with clear indication routes of vehicles' movements, placement of special signs, and speeding allowance, schedule transportation activities by avoiding peak traffic periods. The Traffic Management Plan has to be approved by Traffic Police and disclosed to local community prior commencement of construction works on respective sites;
- Provide proper lightening of construction site;
- Development of Site Specific Plans for campsites;
- Carry out regular awareness campaigns among work staff, including specific hazards associated with the spread of HIV/AIDS.
- After completion of the construction works reinstate construction and camp sites by bringing them to its primary condition;

- PSC will conduct post-construction audit during defect liability period to make sure that construction sites and camps are properly cleaned and restored before hand-over to Executive agency – MFT.

For workers

257. Separate Site Specific EMP (SEMP) for labor/construction camps will be developed by Contractor, endorsed by PSC and approved by the Environmental Specialist of PMO prior commencement of works. SSEMP for labor/construction camps will describe waste collection and disposal procedure, set up of camp facilities (such as a storage place for construction materials and techniques if any, laundry and toilets, access roads) in the way, which will allow to minimize impacts on environment and disturbance of local population. Labor camps have to provide safe and adequate living conditions for workers, such as dining rooms, toilets, shower rooms emergency medical kits. Other measures for fire-fighting and preventing electric shocks etc. need to be organized in accordance with national standards.

258. The Contractor will require to develop Occupation Safety and Health Plan, which covers among others the following topics: usage of PPE, working procedure in dangerous conditions (works at height, with noise equipment and etc.), training activities and others.

Cultural heritage

259. The ALC will be constructed on cultivated agriculture lands. As it was noted in chapter 4.5, the closest to construction site heritage is located at the distance more than 20 km from project site in Andijan city.

260. Nevertheless, there is still possibility that some artifacts could be found during digging of foundation pits. For that case, the following mitigation measures will be undertaken in accordance with the procedure indicated in the Law of RUz “On Protection and Use of Objectives of the Archeological Heritages” (2009).

Mitigation measures

- Excavation and other works need to be suspended immediately;
- Area with possible heritage shall be fenced with fencing tape;
- A designated focal point from a local administration (khokimiyat) and representative of Ministry of Culture of RUz need to be informed and invited for assessment of potential heritage and undertaken necessary actions;
- Civil works at the finding place could be recommenced after obtaining permission from the representative of Ministry of Culture of RUz and from focal point from Khokimiyats.

5.3. Operational stage

261. The conceptual design of the project considers the ALC will provide area for renting and opening of various types of productions and processing related to the horticulture sector. The ALC management will ensure that each new production, processing or activities launching on the territory of ALC fully comply with national environmental legislation. In particular, Environmental Appraisal (ZVOS) has to be obtained for activities included in RCM of RUz # 491 (2001).

262. Only processing and production which is not included in the ADB's Prohibited Investment Activates List (PIAL, ADB SPS [2009] could be implemented on the territory of ALC [Attachment 4]).

Impact on the air

Noise level

263. In accordance with data provided by engineering team, after the ALC commissioning, about 933,000 cars annually will come in and out the center. Among them around 457,000 cars will be light and rest will be vehicles with various carrying capacities.

264. The measurements of number of cars crossing highway during the 20 minutes in day and night time were conducted by PPTA's consultant. The measurements showed that 312 cars during 20 minutes moved during the day time and the same amount during the night time. It was calculated that annual flow of car on the part of road adjusted the the project site is around 8,199,360 cars per year. It means, that flow after implementation of construction of the ALC expecting number cars will increase on 11 % due to increasing number of cars coming in and living the ALC.

265. Based on findings of research, conducted by national Institute of Hygiene under the Ministry of Health of RUz, increasing traffic on 2.5% leads to increasing equivalent noise level on 0.5 dB. Consequently, increasing traffic on 11 % will cause increasing noise level up to 2.3 dB in comparison with existing. Calculated difference between existing noise level and expecting is less than 3 dB. In accordance with IFC requirements, "Noise impacts should not exceed the levels presented in Table 1.7.1 or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site."[31]

266. The ALC operation will not generate vibration which may adversely impact on people and integrity of the houses and buildings.

267. In accordance with data, provided by engineering team, noise generated by the noisiest equipment in cold storage building - chiller will be around 50 dB at the 2 meters distance. Therefore, operation of the cold storage building will not lead to exceeding standards for noise for commercials and residential areas (Table 3).

Mitigation measures

- Prohibit use honks by vehicles on access roads and on the territory of ALC especially during the night time;
- Limit speed of vehicles on access and internal roads by 30 km/h.

Air pollution

268. During the ALC operation air pollution could be caused by processing lines (added value chain) which will be installed into the pavilion 6. For each processing line a local environmental assessment need to be conducted and Environmental Appraisals need to be received from Goskompriroda.

[31] IFC, General EHS Guideline, Chapter 7 "Noise", 2007.

269. Exhaust gases from engines of working machines can also pollute the air. Therefore, the trucks and cars will not be allowed remain at idle on more than 5 minutes.

270. Odor from solid wastes and sludge of waste water treatment plant may impact on people living in Teraktagi RCA and military dormitory. The ALC set up is designed in the way, when waste management area and waste water treatment plant are located away from the settlements, which decrease these impacts.

271. Nevertheless, in is important to make sure that solid wastes and sludge from WWTP will be disposed in time and in proper way.

272. Increasing of local temperature from working of cold storage's compressors may occur during operation phase. This could impact on people living next to the ALC. There are no official regulations establishing standards for distance between compressors and living area. However, based on consultations with local engineers the minimum distance between compressors and border of entity should not be less than 4 meters. As shown on Figure 3, location of cold storages ensures no impact on settlements.

Mitigation measures

- Prior commissioning of any processing line in added value chain pavilion ensure, that local Environmental Appraisals are received;
- Prohibit for all type vehicles to remain at idle on more than 5 minutes;
- Ensure that solid wastes and sludge WWTP are disposed timely in accordance with waste management plan;
- Strongly prohibit to burn any wastes on the territory of the ALC.

Impact on water resources

273. The main impacts on water resources during operation phase will be water use and pollution. During the ALC operation stage water will be used for domestic purposes, processing and irrigation of the territory. The main consumer will be processing where water will be required for washing of fruits and vegetables and producing of agriculture goods.

274. It is expecting, that daily water consumption of the ALC will be around 515 m^3 for processing and domestic use. Currently, there is no a centralized water supply system on the site and in the surrounded settlements. Population use ground water for domestic consumption. This water is pumped by hand pumps from 10–12 depth.

275. However, currently a state program on connecting the rural settlements to centralized water supply system are being implemented in the Andijan district. Transmission main is located in 3 km to the north from the project site. In accordance with data, provided by Andijan province hokimiyat and Andijan branch of Suvoqova, all settlements surrounded the ALC will be connected to that transmission main by 2019. A representative of Andijan district Suvoqova confirmed, that the ALC also could be connected to that water pipe without any risk on water shortage for other water consumers.

276. Nevertheless, in accordance with national legislation,[32] the ALC administration has to receive a permit for special water use from State Committee on Ecology and Environment protection (SCEEP) before the ALC will start operation.[33]

277. Release of untreated sewage, waste waters from processing into the water courses without or improper treatment will lead to pollution of ground water. Design of waste water treatment plant which is part of the ALC facilities will ensure a compliance of treated water with national standards[34] for irrigation water courses. Technology of waste water treatment plant will allow to treat all types of waste waters generating from the ALC operation: communal sewage and from processing. Chemical laboratory will use modern equipment which minimize generation of polluted water. A separate sewage network will be constructed for rain water from the territory of the ALC. The rain water will be collected into the sedimentation tank for cleaning, after this, cleaned water will be pumped into water reservoir and could be released into the same water course.

278. All rainwater will be collected in storm water collection network and redirected to treatment facilities. Each pavilion of ALC will be connected to the internal sewage network. Waste treatment plan could be extended as per needs for for the next stages of the project – construction of meat and dairy pavilions. For that case all requirements for new facilities indicated in chapter 5.1. need to be implemented.

279. The following mitigation measures need to be undertaken for the protection of water resources:

Mitigation measures

- Receive all necessary permits for usage of drinking water and discharge of sewage water;
- Prohibit discharge of untreated water into the surface water or soils;
- Ensure properly functioning of the waster water plant; and
- Conduct regular monitoring of treated water quality.

Waste Management

280. As described in chapter 3.2, it is expecting that around 3,200 ton of waste will be generated annually or 8.2 ton per day after full commissioning of ALC. Mainly the wastes will be represented by organic wastes, wastes from cleaning ALC's territory and some hazardous generating from maintenance of equipment. To manage these amount and types of wastes, Capacity Building and Training Consultant will design solid waste management area and it will be agreed with national agency "Toza Hudud."

281. In accordance with Business Plan included in Feasibility Study for Andijan ALC, 302,500 USD will be provided for organization waste management system and faculties in the ALC.

[32] Resolution of Cabinet of Ministries (RCM) of RUz #171 dated from June 14, 2013 "Regulation on the procedure for issuing a permit for special water use and water consumption."

[33] RCM # 214 dated from August 4, 2014 "Regulation on the procedure for issuing a permit for drilling of ground water wells."

[34] Sanitarian requirements for development and approval of maximum allowed discharges (MAD) of pollutants discharged into the water bodies with waste waters (SanR&N No 0088-99).

282. The SWMP should include but not limited by: list of anticipated wastes which will be generated during the ALC operation with indication sources, scheme of locations of bins, schedule of collection and disposal of wastes within the territory of the ALC and schedule of disposal from the territory of the ALC. The plan also should define maximum amount of anticipated wastes and national agencies where wastes will be disposed.

Hazardous materials

283. During ALC operation phase the hazardous materials will be generating during repairing works of machinery and equipment. Improper storage and disposal of oil may lead to soil, ground and surface pollution.

Mitigation measures

- Dispose used oil in accordance with national regulation;[35]
- Prohibit to release used oil or any chemicals on the ground or water courses.

Non-hazardous wastes

284. Organic residuals from post harvesting process, communal wastes, packing materials, plastic bottles and bags, organic wastes will be generated during ALC operation. It is recommended that organic wastes could be sold/transferred to local farmers as fodder for livestock. Communal wastes need to be disposed on the municipal landfill determinate by local hokimiyats and all recyclable wastes (packing materials, plastic bottles and bags) to relevant local waste processing organizations (paper, glasses, plastic).

Health Safety

Traffic management

285. Increasing number of vehicles coming to and from the ALC may lead to increasing of accidents on the highway Andijan-Asaka-Ferghana. To minimize such risk, PPTA's engineers consulted with representative of the national road agency.

286. Road design, all necessary signs and notification, speed limitation on access road will be developed in consultation with road agency in accordance with national regulation.

287. The territory of the ALC is around 57 ha. Special Traffic Management Plan for a movement of vehicles inside of ALC will be developed by ALC's management and agreed with Traffic Police. The Traffic Management Plan during operation should include routes for visitors' vehicle movement, for the ALC's internal cars, and indicate roads for pedestrian. Moreover, special road sings for traffic management will also be placed inside of the ALC.

288. ALC's plan with indication of routes to each pavilion and facilities will be placed at the entering point and on the territory of center for better orientation of the visitors.

[35] Resolution of Cabinet Ministries of RUz # 258 "On collection, storage and further disposal of used technical oil" dated from 4 September 2012.

Operation of facilities

289. For operation of pavilions for small and medium business, and wholesales pavilions, an Occupational Health and Safety Plan will be developed also by ALC Operation and Management Consultant. The OHSP includes Fire Safety, Action plan for emergency situation. These documents will be developed in accordance with national requirements.

290. Separate Operation Health and Safety plans will be developed for maintenance of cold storage as well. This plan will be developed by Operation and Management Consultant.

Mitigation measures

- Develop an Occupational Health and Safety Plan, which includes Fire Safety, Action Plan for emergency situation for each ALC facility;
- Ensure proper implementation plans during operation of the ALC;
- Conduct monitoring of road accidents related on the access roads during to movement into and from ALCs;
- In case of accidents, revise and refine movement of vehicles on the access roads together with road police;
- Develop internal traffic management plan and conduct monitoring of its proper implementation.

Socio-economic impact

291. Commissioning the ALC in Andijan province will have a significant socio-economic impact. For economic part the project will have direct, indirect and induced impacts.

292. **Direct impacts**. Taking into consideration an investment level in the order of US $ 180 million, it has been estimated that the construction of the ALCs will generate a direct gross added value of approximately US $ 60–80 million in the form of a wage bill and contributions to Social Security. It is estimated that the construction of each ALC will generate between 560 jobs and 600 direct jobs throughout the 30 months of the work (equivalent to 430,000 daily wages).

293. **Indirect impacts**. The consumption of national goods and services derived from the construction of ALCs indirectly supports approximately 150 jobs of thirty months duration (equivalent to 120,000 daily wages). These indirect jobs are related to the national companies in the construction materials and equipment sectors that will provide these goods and services to the awarded contractor. Additionally, an impact is generated on the total imports of the country, which has been estimated at US $ 20–30 million in the two and a half years of the works.

294. **Induced impacts.** The generation of income in the form of wages described above will have an effect on the increase of consumption (food, transport, clothing, etc.) derived from the increase in income. In terms of employment, the consumption of directly and indirectly generated income would sustain about 170 jobs during the project execution period, equivalent to 123,300 wages at the end of the thirty-month duration of the works.

295. As consequences, increasing income of local population will improve their livelihood, it will reduce unemployment in the district, especially among young generation and females. A special capacity building program included in gender action plan will help to increase opportunity for local women to be hired in the ALC.

296. Other impacts related to risk and inconveniences for population from surrounded settlements caused by ALC operation are described above. Implementation of proposed mitigation measures will minimize such risks. A Grievance Redress Mechanism (GRM) developed under this project and the national system on citizen appeal will help to ensure that the ALC operates in compliance with national standard.

Cumulative Impact

297. There is some possibility that cumulative impact may take place, if cement factory located in 650 meters to the west south from construction site will be demolished and transferred to another area. The possibility is quite low, since in accordance with government plan, the factory has to be demolished by the end 2019. The construction of ALC will start in 2021.

298. In case if demolishing of factory will delay and it will be conducted in the same period as construction of ALC, cumulative impact may occur due to significant increasing of number of trucks on the road Andijan-Asaka. To mitigate this impact, a Special Traffic Management Plan needed to be developed to avoid conflicts on the road.

299. If a highway located next to the cement factory be used for transportation of equipment and facilities, this cumulative impact will not occur.

6. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

300. One of the main goals of the IEE is to facilitate the participation of all stakeholders and local communities at all stages of the project cycle: from the pre-construction phase and construction activities to its operation. In this regard, a number of consultations were held in the project districts to capture the stakeholders' opinions about the project and agree on the project activities.

301. Prior to the public consultations several meetings were conducted with internal and external stakeholders, such as representatives of the provincial and districts level committee on Ecology and Environment Protection, district Khokimiyats and makhallas, land cadaster committee, district water supply agency (Suvoqova).

302. Public consultation (PC) was conducted on March 15, 2018 in administrative buildings of Andijan district khokimiyat. Representatives of the settlements Teraktagi which is the closest to the project site, representatives of SCEEP, local administration, land cadastre participated the meeting. PC participants were introduced with project's main features, results of environmental assessment and preliminary results of finding in term of resettlements issues. The consultant introduced Grievance Redress Mechanism and ADB requirements on public disclosure process. The information was presented with using Power Point Presentation (Presentation and photos from the consultation are provided in Attachment 5).

303. The participants were explained that the project currently on the conceptual stage which will be followed a detail design stage. If any changes in the project design will take place, the environmental assessment will be revised per new circumstances and new round of public consultation will be conducted with affected people.

304. During PC people were requested to give their opinions and suggestions. In addition, participants were provided with contact information of PPTA's international and national Environmental Specialist for further suggestions and questions.

305. The stakeholders and consultation participants were informed that Contractors would develop an Informative Banner with information on project objectives, activities, implementers, schedule of construction works, deadlines, contact information and logbooks for complaints and suggestions on each construction site.

306. Among 65 participants from Teraktagi settlement and various agencies 18 were females. The main issues raised during the public consultation in regards environmental issues are presented in the Table 19:

Table 19: Issues Raised During Public Consultation

Issues raised	Response	Addressed in IEE
What kind of water sources will be used for ALC?	The ALC will be connected to the water supply main trunk. The main trunk will be construction in 3 km to the north-east in 2019	Details provided in Chapter 5
Will the ALC have a waste water treatment? There is no centralized sewage water on the site	Yes, waste water treatment plant is part facilities of ALC. The water treatment will ensure quality of treated water in accordance with national standards for discharging water into irrigation canals	Details is provided in Chapters 3 and 5
What is total amount of investment for this project?	It is planned that total cost of the project will be around 197 USD	Detail is provided in Chapter 1
How many work places will create this ALC?	Based on similar ALCs operating in other countries, number of workers, including qualified staff will not less than 1000 people.	Details are provided in Chapter 5
Will be it possible for local population to get job on this ALC?	Yes, one of the target of this project is improve living conditions of population. Creation new jobs for locals will part of the project	Details are provided in Chapter 5

307. Participants noted importance and their high expectations from this project as a source of new job opportunities for local populations and economic benefits for farmers and producers of whole Andijan province.

308. This IEE incorporates comments and suggestions from all concerned stakeholders. The final IEE report will be made available on local language on RRA official website and in English on ADB's website.

309. As part of information disclosure, the final version of IEE will be translated into local language and will be delivered to local communities and relevant authorities (hokimiyats). The

final IEE report will be sent to Ecology and Environment Protection Committee in Andijan province for further use during the construction and operation phases.

310. RRA. In order to maintain the transparency of the public disclosure process, the semiannual environmental monitoring reports (EMRs) will be published on the ADB and RRA websites as well. The hard copies of EMRs will be also sent to the Ecology and Environment Protection Committee in Andijan province.

311. Future consultations for project stakeholders shall follow as mentioned below.

(i) During detailed design stage, in case of any major changes in the design/alignment/location, the IEE will be updated accordingly. The PSC will hold at least one public consultation meeting at early stages to solicit perceived impacts, issues, concerns and recommendations from affected communities.

(ii) Prior to construction, the PSC will conduct an intensive information, education and communication campaign (IEC) to ensure the sufficient level of awareness/information among the affected communities regarding the upcoming construction, its anticipated impacts, the grievance redress mechanism, contact details and location of the PSC, and status of compliance with the Government's environmental safeguard requirements. Among others, the information banners containing information about the subproject, implementation schedule and contact details of the executing agency and Contractors will be installed at the strategic locations within the subprojects' main areas of intervention. The grievance redress procedure and details will be posted at the offices of the district branches of PSC, Rural Reconstruction Agency (RRA) and district hokimiyats.

7. GRIEVANCE REDRESS MECHANISMS

7.1. Objectives

312. In accordance with ADB SPS (2009), Grievance Redress Mechanism (GRM) will be established after the project effectivity. The main goals of GRM are ensuring the receipt and timely redress of grievances and concerns submitted by the aggrieved project affected persons and resolve complaints at the project level and prevent escalation to the national courts or ADB Accountability Mechanism. A grievance mechanism will be established to allow affected persons appealing any disagreeable decision, practice or activity arising from land or other assets compensation. APs will be fully informed of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation. The grievance mechanism shall not impede access to the country's judicial or administrative remedies. Affected persons can approach a court of law at any time and independent of the project level grievance redress process.

313. Along with the ADB requirements on development and approval of grievance redress mechanism by implementation of investment projects, grievance redress procedure in Uzbekistan is also regulated by the national legislation of Republic of Uzbekistan, in particular by the law "On Citizens' Applications" and the "Law on the order of submission of appeals of physical and legal entities" ((#378, 03 December 2014). According to the "Law on the order of submission of appeals of physical and legal entities", the application or complaint shall be considered within fifteen days from the date of receipt in the state authority, which is obliged to resolve the issue on the merits, as well as require additional study and (or) check, a request for additional documents - up to one

month. The submission procedure for grievances and citizens' applications has been discussed during the public consultations in the project districts.

7.2. Grievance Redress Mechanism

314. The GRM for the current project takes into account the national legislation, the specificity of the project sites and results of public consultations. According to the Resolution 97 (29 May 2006) the Khokimiyats of the respective rayons (cities) are obliged to notify owners of residential, production and other buildings, constructions and plantings on the made decision in writing for signature not later than six months prior to demolition, attaching to the notice copies of the relevant decisions of the khokims of rayons (cities) and regions on the basis of the decision of the Cabinet of Ministers of the Republic of Uzbekistan on any land acquisition, demolition of residential, production and other buildings, constructions and plantings located on the land.

315. The APs will have the right to file complaints and queries on any aspect of land acquisition compensation and resettlement. PMO (involve the personnel from the Rural Reconstruction Agency (RRA) and Ministry of Foreign Trade (MFT)) will be responsible for establishment of GRM after the project effectivity and act as the GRM secretary to make sure that the GRM is operational to effectively handle environmental and social concerns of project affected persons. PMO will be assisted by project management and supervision consultant (PSC) in GRM implementation. The proposing GRM was discussed with RRA specialists, representatives of khokimiyats and it was presented during the public consultations. All possible avenues are made available to the APs to resolve their grievances at the project level. Under the proposed project level grievance mechanism, affected households may appeal any decision, practice or activity connected with the assessment or valuation of land or other assets, acquisition and compensation. APs will be made aware of the procedures they can follow to seek redress, including, if necessary resort to the courts through the Government's grievance mechanism. The project grievance mechanism will be disseminated via the final LARP leaflet that will be distributed to affected households through the makhalla or village assembly of citizens or farmers councils during the disclosure consultations.

316. In addition, the GRM was discussed with PPTA Resettlement team and updated into the format applicable for both aspects – environmental and social in term of environmental impact and mitigation measures. After discussion with all parties, the following multi-level GRM is proposed for the project and is described below in Table 20.

Table 20: Grievance Redress Mechanism and Levels

Level/Steps	Process
Level 1: **Contractor's office (construction period) or district khokimiyat**	The aggrieved person may apply to the Contractor's office in each project site. The social and environmental specialist will be in charge for receiving and registration complaints. PMO local representatives will collect information about received complaints on daily base. The alternative entry point for complaints will be also khokimiyats due to their obligations defined by national legislation. 1st deputy of khokim responsible for industry, capital construction communications and utilities is usually responsible for any issues/complaints regarding the construction and land allocation. (S)he will work closely with the PMO and inform them in case of complaints. After registration of received complaints, the Contractor's representatives and/or the khokimiyats will review nature/specificity of the complaint and will forward it to relevant party for resolving. Depending on nature of complaint it may go to Contractor, Land Cadaster, Makhalla or district branch of SCEEP. In parallel, PMO

Level/Steps	Process
	local representatives will inform PMO in Tashkent about received complaint and further actions undertaken for its solution. PMO representatives will be assisted by PSC in GRM implementation. All the responses shall be provided to complainants in a written manner. At this level complaint should be resolved for 15 days.
Level 2: **PMO's secretariat in Tashkent**	In case the grievance was not redressed on the first stage or applicant is not satisfied with the decision made/solution, s/he can submit the grievance directly to PMO in Tashkent. The PMO will review the compliant and will forward complaints to respective department to made decision on its redress. In case the grievance is not related directly to the project, the further instance will be recommended to the applicant where s/he should apply for the decision making. In case, if the compliant is required more time and resources for resolution, the PMO may establish complaint handling team with following members such as representatives from PMO local representative office, PSC, Contractor, district kokimiyat: cadastral department and mahalla or village assembly of Citizens or/and farmer's councils, or/and women association. All complaints will be resolved in 15 days, and in case additional details are required, a maximum of 30 days will be used to resolve and close the complaint with prior notification of complainant. All the responses shall be provided to complainants in a written manner.
Level 3: **Economic Court**	If the issue was not solved or the applicant is dissatisfied with the decision/resolution, the aggrieved person may submit grievance to Economic Court (Court of Law) where decision will be made in accordance with relevant national legislation. However, APs can approach the court of law at time during the grievance redress process independent of GRM and the grievance mechanism should not impede access to the country's judicial or administrative remedies

7.3. GRM Records and Documentation

317. Most of grievances on environmental, land acquisition and resettlement issues are redressed at 1-2 levels. All grievances received from the population will be registered in a logbook which should be available at all levels: at the site office of Contractor, each PMO local representative office. Besides, there are also logbooks in the khokimiyats where the grievances from the population are usually registered. Even so, the information on received by Contractor grievances and applications from the aggregated persons and undertook measures should be submitted to the representatives of local PMO offices for the accounting all grievances. Thereafter the information on all received grievances will be collected at the PMO.

318. The contact information of the Contractors, PSC, PMO local offices and PMO Tashkent secretariat will be disclosed to community members and APs during the public consultations in LARP finalization stage, as well as during the pre-construction public consultations.

319. The Contractor and PSC should include the information on grievances in monthly progress reports submitted to the PMO, who in their turn will include aggregated information to the semiannual environmental monitoring reports (EMR) to be submitted to ADB.

320. The aggrieved persons can also use the ADB Accountability Mechanism (AM) through the direct citizens' application to the Head Quarter in Manila, particularly to Complaints Receiving Officer, Accountability Mechanism Asian Development Bank Headquarters 6 ADB Avenue, Mandaluyong City 1550, Philippines Email: amcro@adb.org, Fax +63-2-636-2086.

321. AM is the last resort and ADB has its availability as a recourse in case other mechanisms for dealing with harmful project effects are not successful. GRM is required by SPS and the use of project level GRM should be encouraged first.

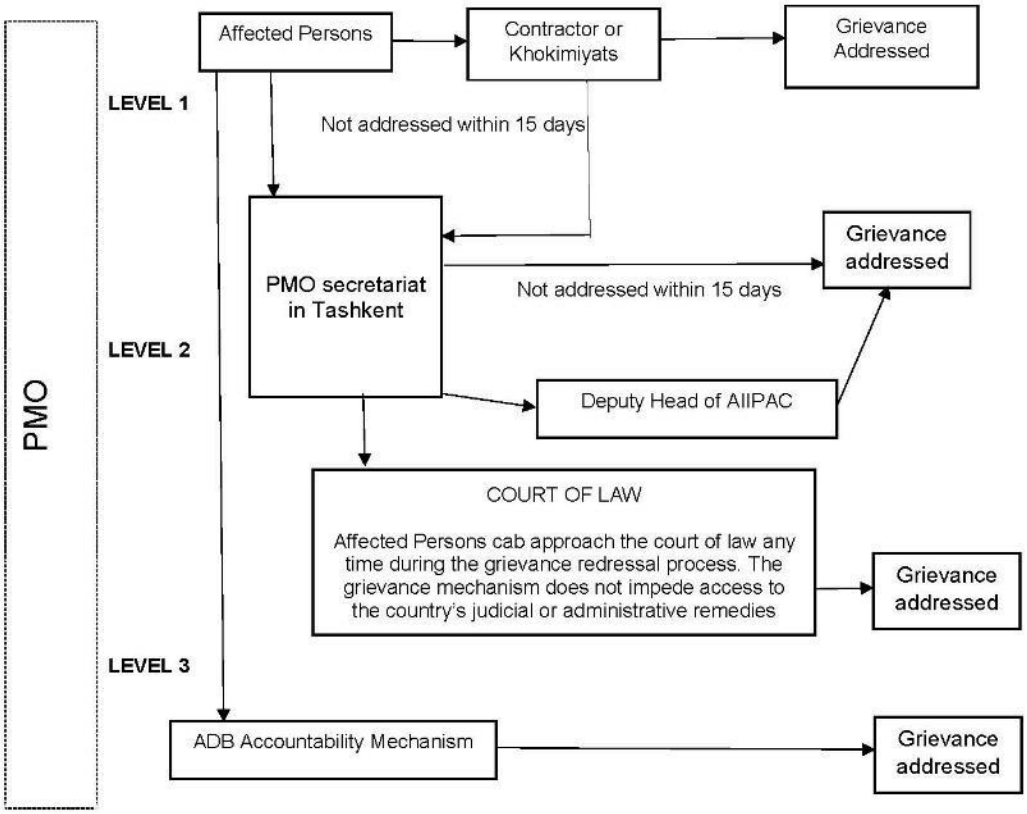


Figure 25: GRM Process

8. ENVIRONMENTAL MANAGEMENT PLAN

322. The Environmental Management Plan (EMP) compiles the comprehensive information gathering a summary of impacts previously identified, the actions required to mitigate those impacts in accordance with the laws of the Republic of Uzbekistan and the ADB safeguard policy; and the monitoring activities that are to be undertaken as part of the project in order to confirm that they have been effective in reaching their objectives.

323. The EMP also details the institutional arrangements and capacities that currently exist, or that will be put in place during project implementation, to ensure that the IEE (including the EMP) has (i) comprehensively considered both Uzbek and ADB requirements for environmental protection, (ii) identified all likely environmental impacts, (iii) proposed appropriate mitigation measures, and (iv) put in place the necessary systems to ensure that effective procedures for environmental monitoring and control of the project impacts, and mitigation measures are implemented throughout the life of the project.

8.1. Environmental Mitigation measures

324. Mitigation measures required to address the impacts identified by this IEE have been consolidated in the following EMP (Table 21). The table provides information on anticipated impacts during the pre-construction, construction and operation phases with proposing mitigation measures, defining responsible party for their implementation. It is considered that PMO's Environmental Specialist (ES), International Environmental Specialist of PSC and Environmental Officers from Contractor will be responsible people for EMP implementation.

Table 21: ENVIRONMENTAL MANAGEMENT PLAN

Impact	Mitigation measure	Responsibility	Cost
Pre-construction stage			
Project design	• Project Supervision Constultant has to design waste water management plant with capacity no less than 515 m^3/day. Selected water treatment technology has to ensure compliance of treated water with national standards and requirements indicated in para 146-148. If ALC's water consumption increases during the project detail design stage, the waste water treatment plant's capacity needs to be revised accordingly; • Prior commissioning of construction works on waste water treatment plant, additional study for noise, vibration and air pollution needs to be undertaken and national environmental assessment needs to be conducted along with receiving necessary permissions as indicated in Chapter 2, Table 1. • Training and Capacity Building Consultant will develop waste management plan, which will include among others, the removal and disposal of solid waste, the cleaning of pavilions, dependencies and road cleaning, and finally the cleaning of the sewage and rainwater network of the ALC. This plan will also establish the cleaning and disinfection protocol of the common areas of the ALC. • If Contractor decides to use own batching or bitumen plants, a	PMSC develops detail design PMO monitor compliance PMO ensure timely implementation of LARP and payment compensation	No cost Compensation costs are included in LARP and IEE

Impact	Mitigation measure	Responsibility	Cost
	national environmental environmental assessment needs to be conducted prior commissioning of construction works; • The design of batching or bitumen plants need to ensure that during plants operation dust level in the Teraktagi settlement will not exceed baseline parameters, especially during the windy weather; • New additional waste water treatment facilities need be constructed for the next stage of ALC construction; • All permissions, indicated in Table 1, Chapter 2 need to be received and compensation payments for affected people need to be done prior commencement of construction works;		
Absence of environmental experts in PMO	• Ensure that Environmental Experts with appropriate education is hired and he/she is involved in the work since the stage of bidding documents preparation.	PMO	ES is part of PMO with appropriate budget
Lack of proper environmental requirements	• All environmental requirements are needed to be included into bidding documents and a Contractor's contractor; • Bids evaluation has to be done with consideration of: capacity of bidders to meet EMPs requirements, proposing adequate budget efficient for implementation EMP, existence of good practice in environmental performance within other similar projects; • Include list of required national approval and licenses (indicated in Chapter 2, Table 1) are included in the bidding documents and responsible for receiving such permission are identified.	PMO, PSC's Environmental Specialist	No cost required

Impact	Mitigation measure	Responsibility	Cost
Improper assessment of bidders' environmental capacity	• Include in working group of bidding committee environmental expert. • Ensure that awarded Contractors have proper environmental capacity, staffing and budget for EMP implementation.	PMO, PSC's Environmental Specialist	No cost is required
Non-compliance with national environmental legislation in term of conduction environmental impact assessment and required permission	• Prepare ZVOS as indicated in Chapter 2, Table 1 and submit them to Andijan Province Committee on Ecology and Environment protection for revision and approval. • Include the requirements indicated in EA into the final EMP.	PMO Environmental Specialist	Will be financed from the PMO budget
Generation of different potential environmental impacts due to changes in design, layout	• Update or new IEE to be prepared with full compliance of ADB SPS (2009) • If any changes into the ALC layout takes place during project detail design stage, make sure that waste management area, waste water treatment plant and cold storage places are located away from settlements (no close than 100 meters);	PSC's Environmental Specialist updates IEE PMO submit to ADB for revision and endorsement	Included in the PSC contract
Non-compliance with national and international requirements during conduction bidding for purchase machinery and mechanisms	• Goods procured for project implementation will be done in compliance with ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009); • Environmental specifications have to be included in bidding packages for purchase machinery within the project. Particularly, toxic level of machinery must meet "Euro 3" environmental requirements as defined by national regulations[36] and national standards on requirements for refrigerators[37].	PMO, PSC's Environmental Specialist	No cost is required

[36] Resolution of President of RUz "On measures for further development of production at the Samarqand automobile plant and renewal automobile park", dated from December 14, 2006.
[37] Attachment # 2 of Resolution of Cabinet Ministries of RUz # 17 dated from 9 January 2018.

Impact	Mitigation measure	Responsibility	Cost
Improper SEMP and SSEMP development	• Within 30 days after contract award and prior to commencing any physical works, Site-specific Environmental Management plans (SSEMPs), and Topic Specific Management Plans Waste Management Plan, Traffic management Plan, Construction Camps Management Plan and Occupational Health and Safety Plan (OHS Plan) have to be developed by the Contractor and they will be endorsed by PMC before submission to PMO for approval. Traffic management Plan has to be submitted local traffic authorities prior to mobilization.	Contractors develop SEMPs PSC reviews and endorses PMO approves	Included in the Contractors budget
Construction stage			
Air quality	• apply watering of construction sites, access and internal roads; • cover transported bulk materials and excavated soil; • locate temporary soil storage piles away from south-east part of the site in order to avoid dust pollution during windy weather; • as much as possible, as per engineering team design, use excavated soil (not top soil) for backfilling tranches for communication and infrastructure network, foundation pits, site leveling to create necessary natural slope for rainwater run-off collection during operation of ALC; • use topsoil for landscaping at the last stage of ALC construction. Distribute non-used topsoil among farmers/householders as per local authority decision; • for waterproofing of building foundation do not use bitumen. It is recommended to use high density polyethylene or its analog; • all vehicles and techniques must comply with technical requirements and have to pass regular inspection	Contractors implement PSC and PMO monitor implementation	Included in the Contractors budget

Impact	Mitigation measure	Responsibility	Cost
	as indicated into the national standards[38]; • prohibit open burning of solid wastes generated particularly from labor camps and during land leveling activities; • minimize site leveling works during period of the high winds when winds could nevertheless direct dust towards adjacent communities; • if minimization is impossible and measurements of dust level shows increasing baseline level in the monitoring points indicated in Environmental Monitoring Plan (Chapter 8.2), it is necessary to install dust protection screen as indicated on Figure 22.		
Noise and vibration	• do not use several machineries at the same time within the distance closer than 75 meters to the west border of the construction site • use of Personal Protective Equipment (PPE) by workers involving during construction stage in the sites where noise level will exceed 80 dB as per national regulation; • inform population about anticipated works; • schedule construction works between 8 am and 7 pm. In case of extension working hours, inform community (Teraktagi RCAs) in advance; • Nevertheless, noise level monitoring needs to be implemented on the regular base in the points, indicated on the Figure 22 in accordance with the methodology indicated into the Environmental Monitoring Plan (Chapter 8, Table 22). In case of exceeding noise level during construction phase on 3 dB in comparison with baseline situation, additional mitigation measures, such	Contractors implement PSC and PMO monitor implementation	Included in the Contractors budget Costs for conduction monitoring are included in Env. Monitoring Table

[38] "O'z DSt 1057:2004 Vehicles. Safety requirements for technical conditions" and "O'z DSt 1058:2004 Vehicles. Technical inspection. Method of control".

Impact	Mitigation measure	Responsibility	Cost
	as construction acoustic screen could be applied. • conduct a visual observation of the farmer's temporary house before commissioning construction works and on monthly base during works of pilling machinery. In case of any cracks or damages mitigation measures need to applied:[39] pre-drilling, using alternatives non-impact drivers, using cast-in-place or auger cast piles and etc		
Pollution of surface and ground water	• Contractor should not start construction works without obtaining permission from State Committee on Ecology and Environment protection (SCEEP)on water use and discharge of waste waters; • Make sure that temporary fence has been built before construction works has started; • Storage of excavated top soil away from water courses (at least 20 meters); • Washing of machinery, equipment and trucks need to be done only in specially designated places equipped with waste water collection and primary treatment facilities (oil traps, sedimentation tanks and etc.); • Store all toxic and hazardous materials required for construction and fuel at secure and managed sites located away from the water courses; • Maintenance of all vehicles and equipment in operable condition ensuring no undue leakage of fuel and oil on the ground; • Organize sanitation arrangements at worksites or any accommodation facilities provided for workers' ensuring that no raw sewage is released into the drain or water courses;	Contractors receives permission PMO and PSC monitor implementation	Included in the Contractors budget Costs for conduction monitoring are included in Env. Monitoring Table

[39] List of mitigation measures indicated in "Transportation and Construction Vibration Guidance Manual", 2013, Chpater 8.

Impact	Mitigation measure	Responsibility	Cost
	• all works related to digging on the depth more than 1.5 meters need to be conducted during non-irrigation season. The irrigation season in that region is May-August. • If this period could not be avoided, use standards technology for construction in areas with high water logging: pumping water into the nearest drainage canal. • Conduct monitoring of water quality in the points indicated on the Figure 23 (before site and after site), and in the water tap of RCA "Teraktagi" on the monthly base by ingredients indicated in the Environmental Monitoring Plan (Table 23).		
Impact on soil	• The top soil of about 30 cm depth shall be removed and stored separately during excavation work, and after completion of the main construction the same soil shall be replaced on the top, in unpaved areas; • The surpluses of top soil need to be distributed among farmers and householders as per decision of local government authorities and Committee on Ecology and Environment protection; • To minimize soil compaction, movement of all type techniques will be allowed only through agreed assess roads; • Contractors will be required to use only authorized carriers with getting all necessary permissions per respective national legislation.	Contractor implements PMO and PSC monitor implementation	Included in the Contractors budget
Hazardous materials	• Strictly follow a Waste Management Plan developed by Contractor, endorsed by PSC and approved by PMO; • Used oil shall be collected into containers placed at the concreted sites and disposed to national oil	Contractor implements PMO and PSC monitor implementation	Included in Contractor budget

Impact	Mitigation measure	Responsibility	Cost
	companies designated for accepting and treatment of used oils[40]; • Refueling vehicles and oil replacement have to be conducted in the special designated and properly equipped places. Such places have to be organized in the way avoiding releasing or leakage of oil on the ground or water courses. Emergency facilities have to be at the place for elimination of accident of oil spills; • Used batteries have to be collected separately and transferred to the local branches "Cvetmet" for further disposal.		
Non-hazardous materials	• Obtain permit on disposal of all types of wastes from local agency "Toza hudud"; • Segregate communal wastes on recyclable and non-recyclable; • Sell recyclable wastes to relevant local waste processing organizations (paper, glasses, plastic) and timely dispose of non-recyclable wastes to the landfill, determinate by local hokimiyats; • Provide hydro isolated septic tank for collecting waste waters at the construction camp sites and bio toilets for workers at the construction sites and timely dispose of waste waters to the local waste water treatment plants; • Prohibit burning of all types of wastes; • Prohibit discharge of sewage or oily water in surface water courses or soil; • Create a safe (sheltered with concrete foundation) storage facility.	Contractor implements PMO and PSC monitor implementation	Included in Contractors budget

[40] Resolution of Cabinet Ministries of RUz # 258 "On collection, storage and further disposal of used technical oil" dated from 4 September 2012.

Impact	Mitigation measure	Responsibility	Cost
Impact on biological resources	• Clear mark the project site in order to avoid unnecessary felling of trees; • Conduct joint revision of the project sites with representatives of inspectors from Andijan district Goskompriroda to identify a number of felling trees to calculate compensations; • Pay compensation for felling trees losses as indicated in CMR # 290 (2014); • During land leveling do not use chemical and burning for removing vegetation.	Contractor implements PMO and PSC monitor implementation Andijan district Goskomprioroda participate in trees counting and monitoring compensation payment	Included in the Contractors budget Cost for felling 704 mulberry and 40 plane trees (to be paid to Goskompriroda) is around 30,000 USD is included in PMO budget
Socio-economic resources	• inform community in advance about planning works; • for construction works which do not require specific skills, hire local population as much as possible; • conduct explanatory work among workers about local culture and traditions	Contractor implements PMO and PSC monitor implementation	
Health and safety issues	• Inform population the Teraktagi RCAs about planning works in advance; • Together with traffic police authority and road agency Contractors should develop a Traffic Management Plans with clear indication routes of vehicles' movements, placement of special signs, and speeding allowance, schedule transportation activities by avoiding peak traffic periods. The Traffic Management Plan has to be approved by Traffic Police and disclosed to local community prior commencement of construction works on respective sites; • Provide proper lightening of construction site; • Development of Site Specific Plans for campsites;	Contractor implements PMO and PSC monitor implementation	Included in the Contractors budget

Impact	Mitigation measure	Responsibility	Cost
	• Carry out regular awareness campaigns among work staff, including specific hazards associated with the spread of HIV/AIDS. • After completion of the construction works reinstate construction and camp sites by bringing them to its primary condition; • PSC will conduct post-construction audit during defect liability period to make sure that construction sites and camps are properly cleaned and restored before hand-over to Executive agency – MFT		
Construction camps	• Separate Site Specific EMP (SEMP) for labor/construction camps. SSEMP for labor/construction camps will describe waste collection and disposal procedure, set up of camp facilities (such as a storage place for construction materials and techniques if any, laundry and toilets, access roads) in the way, which will allow to minimize impacts on environment and disturbance of local population. • Provide safe and adequate living conditions for workers, such as dining rooms, toilets, shower rooms emergency medical kits. • Measures for fire-fighting and preventing electric shocks etc. need to be organized in accordance with national standards. • Develop Occupation Safety and Health Plan, which covers among others the following topics: usage of PPE, working procedure in dangerous conditions (works at height, with noise equipment and etc.), training activities and others. • Contractors shall instruct all the workers to act in a responsible manner.	Contractors develops plans PMO and PSC review and endorse plans and monitor their implementation	Included in the Contractors budget

Impact	Mitigation measure	Responsibility	Cost
Archeological heritages: Chance of finding heritage during earthworks	• Excavation and other works need to be suspended immediately; • Area with possible heritage shall be fenced with fencing tape; • A designated focal point from a local administration (khokimiyat) and representative of Ministry of Culture of RUz need to be informed and invited for assessment of potential heritage and undertaken necessary actions; • Civil works at the finding place could be recommenced after obtaining permission from the representative of Ministry of Culture of RUz and from focal point from Khokimiyats.	Contractor implements PMO and PSC monitor implementation Representatives from Khokimiyat and Ministry of Culture assist in assessment and undertake necessary actions	No cost
Construction sites and areas used for construction camps without proper cleaning and reinstatement works	• After completion of the main construction Contractor shall provide full reinstatement of the construction and camp sites by bringing them to its primary condition; • Remove all rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; • All hardened surfaces within the construction camp area shall be ripped, all imported materials removed; • PSC will conduct post-construction audit during defect liability period to make sure that construction sites and camps are properly cleaned and restored to pre-project conditions before acceptance of works before hand-over to MFT and local khokimiyats.	Contractor implements PMO and PSC monitor implementation State Committee on Ecology and Environment protection (SCEEP) accept the works	Included in the Contractor's budget

Impact	Mitigation measure	Responsibility	Cost
Operation phase			
Impact from new processing and productions	• Environmental Appraisal (ZVOS) has to obtained for each production and processing included in RCM of RUz # 491 (2001) • Only processing and production which is not included in the ADB's Prohibited Investment Activities List (PIAL, ADB SPS (2009) could be implemented on the territory of ALC.	MFT	Included in MFT operational costs
Impact on air quality	• Prior commissioning of any processing line in added value chain pavilion ensure, that local Environmental Appraisals are received; • Prohibit for all type vehicles to remain at idle on more than 5 minutes; • Ensure that solid wastes and sludge from WWTP are disposed timely in accordance with waste management plan; • Strongly prohibit to burn any wastes on the territory of the ALC	MFT	Included in MFT operational costs
Noise and vibration	• Prohibit use honks by vehicles on access roads and on the territory of ALC especially during the night time; • Limit speed of vehicles on access and internal roads by 30 km/h. • In case of complaints from population, conduct additional noise measurement and in case of exceeding baseline parameter on 3 dB install acoustic screen in front of houses faced to the ALC side in Teraktagi ALC to ensure compliance with national standards for night time.		
Impact on water resources	• Receive all necessary permits for usage of drinking water and discharge of sewage water; • Prohibit discharge of untreated water into the surface water or soils;	MFT Goskompriroda	Included in MFT operational costs

Impact	Mitigation measure	Responsibility	Cost
	• Ensure properly functioning of the waster water plant; • Conduct regular monitoring of treated water quality from WWTP; • Conduct monitoring of water quality in drainage canal		Under the state program
Waste Management	• Develop waste management plan for ALC operation and strictly follow its implementation; • Conclude agreements with Toza Hudud agency for disposal of non-hazardous wastes and with oil treatment agency for disposal used oils. • In case of complains from population on odor or any inconveniences related to improper waste management, revise and update plan in order to exclude complains.	Waste Management Authority under MFT	Included on MFT operational costs
Health safety	• Develop an Occupational health and Safety Plan, which includes Fire Safety, Action plan for emergency situation for each ALC facility; • Ensure proper implementation plans during operation of ALC; • Conduct monitoring of road accidents related on the access roads during to movement into and from ALCs; • In case of accidents, revise and refine movement of vehicles on the access roads together with road police; • Develop internal traffic management plan and conduct monitoring of its proper implementation.	MFT,	Included on MFT operational costs

8.2. Environmental Monitoring

325. To ensure that mitigation actions are implemented in accordance with the requirements of the EMP, monitoring shall be undertaken as follows:

- Instrumental Monitoring for environmental quality such as air, noise, vibration, water – Monitoring of dust and noise shall be performed monthly by Contractor with usage their

own equipment. Cost for this equipment is included in Contractor's budget. Schedules, parameters, locations are indicated are presented in Environmental Monitoring Table # 22. In parallel, PMO will conclude agreement with a local certified laboratory on conduction air quality (including dust control), noise and vibration level and water quality monitoring.

- Observational Monitoring – Throughout the project construction phase PMO's environmental specialist under guideline of PSC's IES shall continually monitor the Contractors actions. This will be achieved through weekly inspections of the Contractors environmental performance by PMO's environmental specialist throughout the construction period. PMO shall have the right to suspend works or payments if the Contractor is in violation of any of his obligations under the EMP and SSEMPs.

326. Developed within current IEE an Environmental Monitoring Plan provides details on required measurements, the locations of measurements points, frequency and responsibilities associated with each monitoring task (Table 22).

327. Besides instrumental environmental monitoring indicated into the Table 22, monitoring of EMP's implementation will be carried out. For efficient implementation of this activity it is proposed that several levels of supervision activities need to be undertaken: (i) daily inspection by Contractor's Environmental Officer (EO), (ii) monthly inspection by PMO's ES, and (iii) periodic audit (quarterly) by PSC's IES.

328. It is recommended, that dust and noise level will be measured by Contractor themselves on weekly base. For the measurements Contractor will use own devices which will be certified in local agency – Uzstandard.

329. PMO will hire certified laboratory to conduct noise, dust (for cross checking), SO_2, NO_2 measurement and water quality measurement as indicated in below table. This instrumental monitoring will be conducted on monthly base.

330. Results of environmental performance including monitoring activity have to be properly documented and reported. As indicated in EMP and Chapter 5, Contractor has to perform a log book with information about conducted training on EH&S for workers and another book for registration accidents during the civil works. Original records on results of required instrumental environmental monitoring (air and water quality) also need to be kept in the separate file for records.

331. It is recommended, that prior commencement of the civil works, PSC will develop for Contractors a format for site inspection to optimize a process of environmental supervision. The format could be in form of a checklist listed mitigation measures to be implemented at the construction sites, their performance status and some explanations as required.

Table 22: ENVIRONMENTAL MONITORING PLAN

Mitigation measures	Parameter to be monitored	Location	Frequency	Responsibility	Standards	Cost
Construction Stage						
Air quality Air quality	NO_x, SO_2, CO Dust Dust	Points located in front of Teraktagi RCA (Figure 22) Points located close to settlements Teraktagi RCA (Figure 22)	Baseline – before construction works and after on monthly base and as per receiving complaints from local population during construction works weekly and as per receiving complaints from local population	PMO will hire certified laboratory to conduct analysis Contractor, with using own devices	Hygienic norms. List of Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the Republic of Uzbekistan including Annex 1. SanR&N RUz No.0179-04[41] The same	Cost for hiring laboratory to conduct measurements on monthly base are included in PMO budget - 50 measurements for 4 years – 3,500 USD Cost is included in Contractor's budget –2500 USD
Noise level Noise level	Noise level Noise level	Points located in front of Teraktagi RCA (Figure 22) Points located in front of Teraktagi RCA (Figure 22)	Baseline – before construction works and after on monthly base and as per receiving complaints from local population during construction works weekly Baseline – before	PMO will hire certified laboratory to conduct analysis Contractor, with using own devices	Noise level should not exceed 3 dB than baseline – 75 dB day time and 73 dB – night time The same	Cost for hiring laboratory to conduct measurements on monthly base are included in PMO budget - 50 measurement for 4 years – USD 1,400 Included in Contractor's contract. 1 devise for noise

[41] National standards comply with international IFC standards.

Mitigation measures	Parameter to be monitored	Location	Frequency	Responsibility	Standards	Cost
Vibration imapct	Visual monitoring of house integrity	Farmer's temporary houses located on the south part of construction site	construction works and after on weekly base and as per receiving complaints from local population during construction works weekly Before construction works starting and on monthly base during works of pilling machinery	Contractor	Absence of new damages/cracks	measurements is 200 USD Included in Contractor's contracts.
Water quality	1. Visual monitoring of surface water on existence oil film and turbidity 2. Oil products, dry residual, pH, ammonia, SO_4	Water bodies located next to construction sites (Figure 23)	1. Visual during each visit of construction site (at least weekly). 2. Baseline – before construction works and after on monthly base and per complaints from people	1. Contractor 2-3. PMO will hire certified laboratory to conduct analysis	1. Absence of oil films on the water bodies surface. 2-3. "Sanitarian requirements for development and approval of maximum allowed discharges (MAD) of pollutants discharged into the water bodies with waste waters". SanR&N No 0088-99	Included in Contractor's contracts. Cost for hiring laboratory to conduct measurements on monthly base are included in PMO budget - 50 measurements for 4 years is 6,200 USD

Mitigation measures	Parameter to be monitored	Location	Frequency	Responsibility	Standards	Cost
Operation Stage						
Air quality	Noise level	Points located close to settlements Teraktagi (Figure 22)	1. Per complaints from people on noise disturbance due to work of pump station	MFT	Noise level should not exceed 3 dB than baseline – 75 dB day time and 73 dB – night time	Cost is included into the annual budget of MFT
Water quality		Discharge points from waste water	Quarterly	District branch of Suvoqova	"Sanitarian requirements for development and approval of maximum allowed discharges (MAD) of pollutants discharged into the water bodies with waste waters". SanR&N No 0088-99	Cost is included into the annual budget of MFT
Traffic safety	Number of accident due on access and internal roads	Access and internal roads of ALC	Monthly	MFT	n/a	Cost is included into the annual budget of MFT

8.3 Reporting

332. Monthly Contractor's environmental reports shall consist of: filled formats from each construction site, brief information on conducted training, received complaints and their resolving, accidents during the civil works if any. Contractors will submit their report to PSC for endorsement before submission to PMO.

333. The PSC's monthly and quarterly project progress reports will include a section on Environment, Health and Safety (EHS). The reports will contain information about results of own inspections of EMP implementation. The reports also have to include information on undertaking on-the job and planned training, capacity building activities, proposed actions on improvement of EMP implementation by Contractors. A separate section will be dedicated to GRM. This section shall provide information on received complaints and undertaken actions. The reports will be submitted to PMO.

334. The PMO's Environmental Specialist (ES), assisted by PSC's Environmental Specialist (ES) will develop semi-annual Environmental Monitoring Reports based on information reviewed within Contractor's monthly and quarterly reports and own observation during site visits.

335. PSC will conduct post-construction audit during the liability period to check compliance with EMP requirements completed construction and camp sites. The audit has to be conducted before hand-over project's objects to MFT. Based on post-construction audits results, PMO's ES with PSC assistance will prepare final Environmental Monitoring Report to demonstrate that the sub-projects were properly completed.

8.4. Implementation arrangements

8.4.1 Institutional arrangements EMP implementation

336. The project organizational chart is presented in Figure 26.

337. The Rural Reconstruction Agency (RRA) will be the executing agency. Both the RRA and the Ministry of Foregin Trade (MFT) will be the project implementing agencies. A project management office (PMO) will be established under RRA with its current staff and relevant personnel assigned from The MFT (if and when required). MFT will establish and finance its own implementation/management team/entity to coordinate the implementation and subsequently to be in charge of operation of the ALCs. A project management and supervision (PSC) consulting firm will be recruited to assist the project implementation and supervision.

338. The PMO at RRA will be responsible for implementation of EMP to comply with ADB's safeguards requirements and environmental national regulations. For this, PMO will hire a qualified full-time environmental Specialist who will be guided by an International Environmental Specialist (IES) of the Project Supervision Consultant (PSC) in overseeing the implementation of EMP. The cost for implementing EMP will be included in the construction contracts, and the cost for environmental supervision will be included in the consulting service of the PSC, the cost for environmental instrumental monitoring will be included in Contractors and PMO's budgets. PMO will be responsible for overall environmental compliance with SPS 2009 for both ADB and RRA funded activities. A grievance redress mechanism to handle both environmental and social safeguard issues was discussed with PMO, presented during Public Consultation and will be established after the project effectivity.

339. EMP will form part of the bidding documents. To ensure that mitigation actions are implemented in accordance with the requirements of the EMP, monitoring shall be undertaken as described in Chapter 8.

340. Contractor will be responsible for implementing mitigation measures. Within 30 days after contract award and prior to commencing any physical works, Site-specific Environmental Management plans (SSEMPs) and other plans, indicated in Table 21 will be developed by the Contractors under the guidance of the PSC, and be endorsed by PSC before submission to PMO for approval. SSEMP is the document that the Contractors shall prepare outlining how he intends to implement the EMP at a specific site or for a specific issue to ensure that all mitigations are implemented as specified in the EMP. SSEMPs will be needed for major environmental issues and most critical sites relating to sensitive receptors. During construction, the Contractors must retain the expertise of Environmental Officer (EO) to implement and continually update the SSEMPs, and to report on the implementation of mitigation measures throughout the contract period.

341. The PSC is tasked with specific responsibility to assist PMO in ensuring safeguard compliance of civil works – with particular emphasis on the monitoring of implementation of EMP through the SSEMPs and related aspects of the project. PSC shall mobilize a IES to ensure that the Contractor complies with his environmental obligations. It is required that the IES provides a training program to the PMO's environmental specialist and Contractor's EO prior to the start of construction to develop their knowledge and understanding of the environmental, social, health and safety aspects of the project. PSC's IES shall:

- Assist the team leader in managing and implementing the project and ensuring compliance with the project implementation plan, the loan agreement, and the project agreement(s), particularly with ADB's Safeguard Policy Statement (SPS 2009) requirements and project environment-related legal covenants;
- Review the initial environmental examinations (IEEs) conducted during the feasibility study stage to understand the EMPs, and assist the PMO in updating the IEEs in case of technical design changes or unanticipated impacts;
- Supervise the turnkey contractors during the detailed design and construction/installation of works and facilities to ensure EMPs and measures are properly implemented;
- Assist PMO in ensuring safeguard compliance of civil works – with a particular emphasis on the monitoring of implementation of the EMPs through the site-specific environmental monitoring plans and related aspects of the project;
- Provide on-the-job trainings to the PMO's environmental specialist and contractor's environmental staff prior to the start of construction to develop their knowledge and understanding of the environmental, social, health and safety aspects of the project, and build capacity of staff in the Rural Reconstruction Agency (RRA) and UHF to undertake their tasks in EMP monitoring;
- In coordination with other PSC specialists and PMO staff, and with regards to EMPs, contribute to the preparation of bid documents for the turnkey contracts for establishing the ALCs in selected project sites, and assist RRA and MFT in bid evaluation when required;
- Assist PMO in preparation of bi-annual environmental monitoring reports for further submission to ADB; and
- Contribute inputs to the PSC's quarterly progress reports for project management and supervision and the brief monthly summary reports, highlighting potential and actual

issues/problems related to EMP and recommending corrective measures/actions for PMO's actions.

342. PMO is responsible for overall EMP implementation and will be assisted by the PSC. The PMO's responsibilities include the following, but not limited to:

- Implement the EMP developed within the IEE;
- Ensure the bidding documents of PSC and Contractors include all tasks as described in the approved EMP;
- Supervise the PSC and Contractors in EMP implementation for overall compliance with SPS 2009 requirements and project environment-related legal covenants;
- Ensure all necessary government permits and license, including ecological expertise opinion, for all civil works will be obtained;
- Approve SSEMPs which will be prepared by the Contractors and endorsed by the PSC;
- With assistance of the PSC, prepare, submit to the EA and ADB, and disclose semi-annual environmental monitoring reports on ADB website and in UZB;
- Report in a timely manner to ADB of any non-compliance or breaches with ADB safeguard requirements and take corrective actions promptly;
- Update the IEE in case of technical design changes or unanticipated impacts;
- Establish a Grievance Redress Mechanism (GRM) after the project effectivity and act as the GRM secretary to make sure that the GRM is operational to effectively handle environmental and social concerns of project affected persons;
- Build up and sustain institutional capacity in environmental management and railway safety, including conducting public awareness programs.

343. State Committee on Ecology and Environmental Protection (SCEEP) through it is branches Andijan province will be also involved in the process of project implementation and ALC operation. In accordance with the Law on Nature Protection and the Resolution of Cabinet Ministries of RUz #491 dated from December 2001, a national Environmental Impact Assessment (EIA) will be prepared during the project detail stage. Current IEE could be used as a base for national assessment with some revision in term of formatting. The SCEEP will issues an Environmental Appraisal which will include number of requirements. These requirements will be mandatory for implementation and their implementation will be monitored by inspectors from Andijan district branches of SCEEP.

344. Moreover, for all new fruits and vegetables processing which will be constructed on the territory of the ALC, environmental examination needs to be undertaken and Environmental Appraisal needs to be received from SCEEP for each processing.

345. Representatives of the SCEEP will also participate into a hand-over process as member of State Acceptance Commission. The SCEEP will receive the project's semi-annual environmental monitoring reports from the PMO.

8.4.2 Capacity building activity

346. It is proposed the Project's capacity building on environmental aspects will cover three main directions:

i) ***PMO's capacity*** on EMP implementation during construction stage - to enhance PMO's capacity on the EMP implementation PSC's IES will provide short training for

PMO's Environmental Specialist and further assistance in monitoring SEMP implementation and guidelines for Contractor's Environmental Officer as required.

ii) ***SEMP implementation*** – training will be conducted PSC's IES for PMO and Contractors

iii) ***Awareness program for ALC's*** staff and renters in the project area – in part of environment, the program will cover waste management activates in ALC. The program will be developed by Capacity Building Consultant who will be hired for development of ALC management system. One part of program will include organization of waste management facilities and development awareness progress on its effective implementation.

347. The tentative plan of required training is presented in Table 23.

Table 23: Tentative Program of Training for PMO and Contractors Staff

	Name of training	Time	Recipients	Organizer
1	Overall EMP implementation, Environmental Monitoring Reports preparation	Prior commencement of the civil works	PMO Safeguards Specialist	PSC
2	SEMP implementation	Prior commencement of the civil works	Contractors workers	Contractor's Environmental Officer with support of PSC
4	On occupational health and safety and environmental management	Regularly during construction and operation period	Contractors workers	Contractor's Environmental Officer with support of PSC's ISE specialist

8.4.3 Cost estimation for EMP implementation

348. Costs required for implementing the EMP will cover the following activities:

(i) Conduction instrumental environmental monitoring of noise, vibration level and air and water quality by Contractors;

(ii) Conduction environmental monitoring measures and getting necessary permissions; and

(iii) Awareness program.

349. Although some of the measures included in EMP are an integral part of the civil works (watering, storage of top soil and etc.), some measures (establishing sound-absorbing panels) are required additional funds. Cost estimation for EMP by the main items are presented in Table 24:

Table 24: Cost Estimates for EMP Implementation in Andijan

Item	Quantity	Unit cost, USD	Total Cost, USD	Remarks
Instrumental Monitoring				
Dust measurement devices	1	2500	2500	Cost will be included in Contractor budget
Noise measurement devices for Contractor	1	200	200	Cost will be included in Contractor budget

Item	Quantity	Unit cost, USD	Total Cost, USD	Remarks
Noise measurements for independent assessment (in case of complaints from population)	60	20	1200	Rural Reconstruction Agency (RRA) will hire Sanitarian Epidemiological Station to conduct analysis
Dust measurements for independent assessment (in case of complaints from population)	60	50	3000	RRA will hire certified laboratory (Uzhydromet, Goskompriroda) to conduct analysis
Water quality	60	90	5400	
Subtotal			**12300**	
Environmental Mitigation Measures/Permissions				
Payment for cutting trees • Juniper	2.8[42]x22[43]	120	7400	Cost is included in PMO budget
Installation of acoustic barrier with height 2 meters	80	40	3200	To be installed by UTY along track
Subtotal			**10600**	
Environmental awareness program				
Training on EMP implementation	2	1000	2000	As indicated in table 20. Budget is included in PSC contracts
Subtotal			**2000**	
Total			24900	
Contingency			2490	10 % of subtotal
TOTAL			**27400**	
Staffing				
Environmental Specialist International	8	16000	128000	Cost is included in PSC budget
PMO National Environmental Specialist,	54	1000	54000	Cost is included in PMO budget
Total for staffing			**182000**	
Construction of Waste management faculties	1	302,500	**302,500**	The cost is included the project general budget. No needs for additional cost in EMP

[42] Coefficient which depend on type of trees (CMR # 290, dated from October 20, 2014).
[43] 22 USD is minimal wage in RUz, which is used as a base for calculation of fees.

Item	Quantity	Unit cost, USD	Total Cost, USD	Remarks
Construction of Waste water treatment plant	1 unit	1,589,000	1,589,000	The cost is included the project general budget. No needs for additional cost in EMP
Operation of wastes management facilities (both sewage and solid)	annual	147,722	**147,722**	The cost will be included in MFT operation budget

350. Expenses related to Construction of solid waste management facilities and construction of waste water plant are included in the civil works cost.

351. Expenses related to staffing of PMO, PSC and Contractors with Environmental Specialists are included into their budget. Waste management training is included in PSC capacity building program. Therefore, these expenses are excluded from total budget for EMP.

9. CONCLUSIONS

352. Based on results of the conducted Initial Environmental Examination the following conclusion could be done:

353. During the project implementation and operation phases the impact on environment will have site-specific character. The main impacts anticipating during construction will be dust pollution, generation of wastes and movements of vehicles.

354. These impacts could be mitigated by implementation appropriated measures indicated in Table 21. Along with implementation of measures continuously environmental monitoring needs to be implemented through Contractor and PMO side.

355. GRM needs to be established immediately after loan signing and its proper implementation needs to be monitored from PMO and PSC sides.

356. During operation phase the main environmental impacts are related to increasing traffic on the highway. Special attention needs to be paid to waste management during operation phase.

357. It is essential to develop effective waste management procedure and implement it properly. Such procedure will be developed by Consultant on Capacity Building.

358. In general, the project implementation will have a significant positive impact on socio-economic resources through creating new job opportunities, improvement of market for farmers and general income in Andijan province economy.

10. ATTACHMENTS

Attachment 1. Air Measurements Results

O'ZBEKISTON RESPUBLIKASI
FAVQULODDA VAZIYATLAR
VAZIRLIGI HUZURIDAGI
GIDROMETEOROLOGIYA XIZMATI MARKAZI
(O'ZGIDROMET)

ATMOSFERA, YUZA SUVLAR
VA TUPROQ IFLOSLANISHNI
MONITORINGINI
OLUB BORISH HIZMATI (IMH)
100052, Toshkent shahar, 52
Bodomzor yo'li 1-top ko'chasi, 72
Telefonlar: 237-15-47, 235-86-14
Faks: 233 61 17
Telegraf manzili: Toshkent ГИМЕТ

REPUBLIC OF UZBEKISTAN
MINISTRY OF EMERGENCY SITUATIONS
THE CENTER OF
HYDROMETEOROLOGICAL SERVICE
(UZHYDROMET)

ATMOSPHERE, SURFACE WATER AND
SOIL POLLUTION MONITORING
SERVICE (PMS)
72, 1st Bodomzor yuli str.,
Tashkent 100052,
Republic of Uzbekistan
Telephones: 237-15-47, 235-86-14
Fax: 233 61 17
Telegrame: Tashkent GIMET

2018 29.01 № 06-08/01-26

Директору
ООО «Nazar Business and Technology»
Халмирзаевой М.И.

Центр гидрометеорологической службы при Министерстве по чрезвычайным ситуациям Республики Узбекистан (Узгидромет) в ответ на Ваше письмо № 9/18 - от 18.01.2018 г. направляет Вам ежегодные данные по качеству атмосферного воздуха гг.Самарканд и Андижан за 2016-2017 годы.

Приложение: 2л.

Начальник СМЗ М.А.Плоцен

Качество атмосферного воздуха в г. Андижан за 2016-2017 гг.
среднесуточная концентрация (в мг/м^3)

Наименование примеси		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Пыль	2017	0	0,1	0,1	0,2	0,2	0,2	0,2	0,2	0,2	0,1	0,1	0,1
	2016	0,1	0,2	0,2	0,2	0,1	0,2	0,2	0,2	0,2	0,1	0,1	0
SO_2	2017	0.006	0,007	0,008	0,008	0,006	0,007	0,008	0,007	0,006	0,005	0,007	0,006
	2016	0,010	0,009	0,010	0,008	0,008	0,008	0,008	0,007	0,007	0,007	0,005	0,005
NO_2	2017	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.04	0.04
	2016	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01

Предельно - допустимая концентрация (ПДК с.с.):
Пыль - 0,15
Диоксид серы (SO_2) - 0,05
Диоксид азота (NO_2) - 0,04

Attachment 2. Noise measurements Results and photos

Noise measurements Results and photos

Р Е С П У Б Л И К А У З Б Е К И С Т А Н

НАЦИОНАЛЬНАЯ СИСТЕМА АККРЕДИТАЦИИ

УП «ГИГИЕНА ТРУДА»

при НИИ САНИТАРИИ, ГИГИЕНЫ И ПРОФЗАБОЛЕВАНИЙ

МИНИСТЕРСТВА ЗДРАВООХРАНЕНИИ РУз

«УТВЕРЖДАЮ»

Директор «УИ «ГИГИЕНА ТРУДА»

«17» 03. 2018 г.

З.Н. ТУРАКУЛОВ

ОТЧЕТ

по хоздоговорной работе с ООО «Nazar Business and Technology»
на тему «ИССЛЕДОВАНИЯ ШУМА НА ОБЪЕКТАХ
г.г. САМАРКАНДА И АНДИЖАНА»

Т А Ш К Е Н Т - 2018 г.

1

расположением жилых застроек вблизи от производственных предприятий (Андижанская область). **(Рис. 1-4).**

Таблица 1

Результаты измерений уровней звука на объектах исследований

№ точек	ОБЪЕКТЫ ИССЛЕДОВАНИЙ:		№ измер.	Эквив. уровни звука, дБА	ПДУ для жилой застройки	Превышения
	Самаркандская область					
I..	«Мазар-махалля»	д	1.	41	55	-
		д	2.	40		-
II.	«Дехканабад-махалля»	д	3.	41	55	-
		д	4.	42		-
III.	«Дехканабад-махалля»	д	5.	52	55	-
		д	6.	52		-
		н	**9.**	**52**	**45**	**7**
		н	**10.**	**52**	**45**	**7**
IV.	Магистраль . «Самарканд-Ташкент»	д	7.	75	55	20
		д	8.	75	55	20
		н	**12.**	**74**	**45**	**29**
V.	Магистраль . «Самарканд-Ташкент»	д	11.	76	55	21
Андижанская область						
I.	Фермерское х-во	д	1.	43	55	-
		д	2.	43		
II.	Магистраль . «Андижан-Фергана»	д	3.	75	55	20
		д	4.	75	55	20
		н	**6.**	**73**	**45**	**28**
		н	**7.**	**73**	**45**	**28**
III.	Магистраль . «Андижан-Фергана»	д	5.	75	55	20
		н	**8.**	**73**	**45**	**29**
		н	**9.**	**73**	**45**	**29**

Скорость -80км/час.

№	Грузовые Машины	Легковые машины	автобусы	трактора	Общее кол-во
	72	768	36	8	**884**
%	*8,1*	*87*	*4*	*0,1*	*100*

Рис 1. Загруженность магистрали «Самарканд –Ташкент»
в « часы пик» (дневное время)

Скорость -80км/час.

№	Грузовые Машины	Легковые машины	автобусы	трактора	Общее кол-во
	300	420	6	2	**728**
%	*41*	*57,4*	*0,8*	*0,3*	*100*

Рис 2. Загруженность магистрали «Самарканд –Ташкент»
в « часы пик» (ночное время)

№	Грузовые Машины	Легковые машины	автобусы	трактора	Общее кол-во
	58	246	6	2	**312**
%	*19*	*79*	*1,4*	*0,6*	*100*

Рис 3. Загруженность магистрали «Андижан –Фергана»
в « часы пик» (дневное время)

Скорость -80км/час.

№	Грузовые Машины	Легковые машины	автобусы	трактора	Общее кол-во
	58	246	6	2	**312**
%	*19*	*79*	*1,4*	*0,6*	*100*

Рис 4. Загруженность магистрали «Андижан –Фергана»
в « часы пик» (ночное время)

IV. ЗАКЛЮЧЕНИЕ

Выполнены исследования по изучению шумового режима на объектах исследований в Самаркандской и Андижанской областях согласно ГОСТ 20444-85. Шум. Транспортные потоки. Методы измерения шумовой характеристики. на соответствие их нормативным требованиям по СанПиН РУз №02067-09 «Санитарные нормы и правила по обеспечению допустимого шума в помещениях жилых, общественных зданий и на территории жилой застройки».

На объектах Самаркандской области превышения зарегистрированы на территории жилой застройки размещенных вблизи от магистрали «Самарканд – Ташкент», где превышения для дневного времени составили до 20дБА и 29дБА для ночного времени. В точке измерений («Дехканабад-махалля») превышения в ночное время составили 7дБА, что обусловлено работой производственных предприятий: гипсового завода и цеха по обработке гранита.

В Андижанской области превышения ПДУ на территории жилой застройки, расположенной также вблизи транспортной магитстрали «Андижан-Фергана» составили от 20 до 29дБА.

V. Использованная нормативно-методическая литература, материалы.

1. ГОСТ 20444-85. Шум. Транспортные потоки. Методы измерения шумовой характеристики.
2. СанПиН Руз №02067-09 «Санитарные нормы и правила по обеспечению допустимого шума в помещениях жилых, общественных зданий и на территории жилой застройки

V I. Ответственный исполнитель

Зав. лабораторией физических факторов,
канд.мед.наук, ст.н.сотр. МАГАЙ М.

Photos from the Project Area

Attachment 3. Water Measurements Results

«УТВЕРЖДАЮ»
Директор
ЦСАК в области охраны
окружающей среды
при Госкомэкологии РУз
_____ Файзиев Р.Х.
«29» 03 2018 г.

ПРОТОКОЛ ИЗМЕРЕНИЙ № 78
на 2-х страницах

Химический анализ вод ООО «Nazar Businness and Technology» (NBT) из двух точек Андижанской и Самаркандской областей
(название проводимого эксперемента)

Наименование лаборатории Центр специализированного аналитического контроля в области охраны окружающей среды (ЦСАК) при Госкомэкологии РУз 100100 г. Ташкент, ул. Ш.Руставели 13 А, тел.:255-08-67, факс: 255-23-89, e-mail: anidi@uznature.uz. UZ.AMT.07.MAI. 429 от 08.08.2017 г.

Наименование заказчика ООО «Nazar Businness and Technology» (NBT),100100, г.Ташкент, Яккасарайский район, ул. Ракат 14-7, тел.: (+998 71) 253-36-99/33, факс: (+9998 71) 253-46-41
(адрес, телефон, факс)

Обозначение и данные маркировки объекта измерения поверхностные воды из Андижанской и Самаркандской областей. Дата отбора проб из Самаркандской области от 01.03.2018 г., дата отбора проб из Андижанской области от 02.03.2018 г. Дата доставки проб от 05.03.2018 г.
(номер партии, номер образца, дата изготовления и получения, дата отбора)

Цель, задачи измерений оценка ПДК для рыбохозяйственных водоемов

НД и план на методы измерений имеется

НД на объекты измерений O'z O'U 0147:2000, O'z O'U 0495:2010, O'z O'U0608:2013, O'z O'U0682:2015, O'z O'U0696:2015, O'z O'U0705:2016, O'z O'U 0746:2016

Условия проведения измерений t=25 °C, влажность 56 % .
(температура, влажность, другие окружающие условия)

Измерения, проведенные субподрядчиком -

Результаты проведения измерений (поверхностные воды)

Наименование параметров (требований)	Значение параметров (требований)					Соответствие параметров (требований)
	По НД	Фактически				
		Андижанская область		Самаркандская область		
		А 1	А 2	С 1	С 2	
1	2	3	4	5	6	7
pH, не более	6,5-8,5	7,3	7,9	8,0	7,6	соответствует
Взвешенные вещества мг/л, не более	15	**143**	**415**	**26**	**24,8**	не соответствует
Ионы аммония мг/л, не более	0,5	не обн.	не обн.	не обн.	не обн.	соответствует
Нитраты мг/л, не более	40	не обн.	0,20	0,50	0,25	соответствует
Нефтепродукты, мг/л не более	0,05	**0,22**	**0,558**	**0,399**	**0,639**	не соответствует
Сухой остаток мг/л, не более	1000	622	712	556	552	соответствует
ХПК мг/л, не более	15	**40**	**104**	**72,0**	**112,0**	не соответствует
$БПК_5$ мг/л, не более	3	**4,7**	**12,5**	**8,4**	**13,2**	не соответствует

Дата проведения измерений 05.03- 12.03.2018 г.

Ответственное лицо за измерение (нач.отдела) Мадалиева С.Х.
(Ф.И.О., подпись)

Измерения проводил Мадалиева С.Х.
(Ф.И.О., подпись)

Халмухамедов У.А.
(Ф.И.О., подпись)

Дата выпуска протокола 29.03.18г.

Attachment 4: Prohibited Investment Activities List

The following do not qualify for Asian Development Bank financing:

(i) production or activities involving harmful or exploitative forms of forced labor[1] or child labor;[2]

(ii) production of or trade in any product or activity deemed illegal under host country laws[3] or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals, pesticides, and herbicides,4 (b) ozone-depleting substances,[5] (c) polychlorinated biphenyls[6] and other hazardous chemicals,[7] (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,8 and (e) transboundary trade in waste or waste products;[9]

(iii) production of or trade in weapons and munitions, including paramilitary materials;

(iv) production of or trade in alcoholic beverages, excluding beer and wine;[10]

(v) production of or trade in tobacco;[10]

(vi) gambling, casinos, and equivalent enterprises;

(vii) production of or trade in radioactive materials,[11] including nuclear reactors and components thereof;

(viii) production of, trade in, or use of unbonded asbestos fibers;[12]

(ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests;

(x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

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1 Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

2 Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" (www.ilo.org).

3 A list of pharmaceutical products subject to phase outs or bans is available at http://www.who.int.

4 A list of pesticides and herbicides subject to phaseouts or bans is available at http://www.pic.int.

5 A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at http://www.unep.org/ozone/montreal.shtml.

6 A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

7 A list of hazardous chemicals is available at http://www.pic.int.

8 A list is available at http://www.cites.org.

9 As defined by the Basel Convention; see http://www.basel.int.

10 This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

11 This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

12 This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

Attachment 5. Public Consultation

Registration List

ADB

Регистрационный лист

Общественные слушания по проекту: «Развития инфраструктуры цепочки добавленной стоимости в секторе плодоовощеводства». Март 16, 2018

Andijan district / Андижанский район

No.	Full Name / Ф. И. О	Worked place / Наименование места работы	Adress / Адресс (КФЙ,МФЙ)	Signiture/ Подпись
1	Саййидов Х. А.	Туман ДСЭН/И бош врачи	Анд т. Ҳадиси ф.ш.	
2	Назаров М.	Экология ва атроф-муҳит	Анд туман Кўтарма	
3	Абдуллаев А	Март мфй раиси	Анд тумани Март мфй	
4	Юлдашев А.	Бўстон Турон М.Ф.Й раиси	Анд т/и Бўстон Турон	
5	Даданиёзов А.	Завод КФЙ раиси	Анд. т-и Завод мфй	
6	Тошниязов У	Исломобод мфй маслаҳатчи	Анд т-и Исломобод мфй	
7	Алиев Д	Меҳнат мфй раиси	Анд т-и Гулзор мфй	
8	Тожибоев М	Чинзор мфй раиси	Анд т-и Чинзор	
9	Бахромбоев М.	Тадбиркор мфй котиб.	Анд т.и Тадбиркор	
10	Юлдашева Ю	Маданият мфй раис	Анд т/и Маданият	
11	Халилова М	Анд. туман мфй / маслаҳатчи	Анд т/и Анд-туман	
12	Қосимов А	Жемчатлашон мфй раис	Андижон туман жемчатлашон	
13	Матбоев А	Қорабоғ мфй раис	Анд Туман	
14	Бўронова З	Кўкзор мфй раиси	Анд Туман	
15	Юсупов С	Дўстлик мфй раис	Анд Туман	
16	Нурматова Д	Сарибоғ мфй раис	Анд Туман	
17	Мирзаев М	Янги йўл м-ф-й раис	Анд тумани	
18	Султонов С	Қум. йўл мфй раис	Андижон тумани	
19	Юсупов М	Гузар мфй раиси	Андижон тумани	
20	Халилова М	Нурафшон мфй раиси	Андижон тумани	
21	Қурбонова М	Обод мфй раиси	Андижон тумани	
22	Юлдашев Ф	Мустақиллик мфй раис	Андижон тумани	
23	Юлдашев Я	Интилиш мфй раис	Андижон тумани	
24	Мўйдинов Д.	Зангибобо М.Ф.Й. раис	Андижон тумани	
25	Нурдинов И	Беш паҳлавон МФЙ раис	Андижон тумани	

Регистрационный лист

Общественные слушания по проекту: «Развития инфраструктуры цепочки добавленной стоимости в секторе плодоовощеводства». Март 16, 2018

Andijan district / Андижанский район

No.	Full Name / Ф. И. О	Worked place / Наименование места работы	Adress / Адресс (КФЙ,МФЙ)	Signiture/ Подпись
26	Рахмонов А	Андижон тумани	Бутабора ҚФЙ Новрўз МФЙ	[signature]
27	Тўхтасов Я	Андижон тумани	Ок. ёр Жўмма МФЙ	[signature]
28	Кодиров А.	Андижон Тумани	Мирабод МФЙ	[signature]
29	Мўминов О	Андижон тумани	Топмозор мфй	[signature]
30	Жураев Ё	Андижон. тумани	Мооршод мфй	[signature]
31	Юлдашев О	Андижон тумани	Қоракўрғон мфй	[signature]
32	Жураева С.	Андижон тумани	„Ойжамол" мфй	[signature]
33	Рашидова Г.	Андижон тумани	„Чавгон Доро" м ф й	[signature]
34	Курбонов М	Андижон тумани	Темирчи мфй	[signature]
35	Тошиева Р	Андижон тумани	Ровбой мфй	[signature]
36	Кўкназаров С	Андижон Тумани	Бобожози мфй	[signature]
37	Мирзаев Х.	Андижон тумани	Дардбўйи М. ф й.	[signature]
38	Сотиев А	Андижон тумани	Саноат М.ф.й.	[signature]
39	Рахмонова М	Андижон тумани	Терак-тагн МФЙ	[signature]
40	М. Мадумаров	Андижон тумани	Экин-тикин МФЙ	[signature]
41	М. Иброхимова	Андижон тумани.	Бешбўйиноқ МФЙ.	[signature]
42	Эсонова Э.	Андижон тумани	Айрилиш МФЙ	[signature]
43	Мирзаев Г	Андижон тумани	„Мустақиллик" М.Ф.Й.	[signature]
44	Шамсиддинова	Андижон тумани	„Юксалиш" мфй.	[signature]
45	О. Кодирова	Андижон тумани	„Полосон" мфй	[signature]
46	И. Боймирзаева	Андижон тумани	„Истиқлол" мфй	[signature]
47	Д. Курбонова	Андижон тумани	„Тўхтабек" М.Ф.Й	[signature]
48	Т. Хошимов	Андижон тумани	„Дўстлик" М.Ф.Й.	[signature]
49	Б. Расулов	Андижон тумани	„Тахтакор МФЙ"	[signature]
50	Д. Акбаров	Андижон тумани	ирригацияя бўлими	[signature]

Регистрационный лист

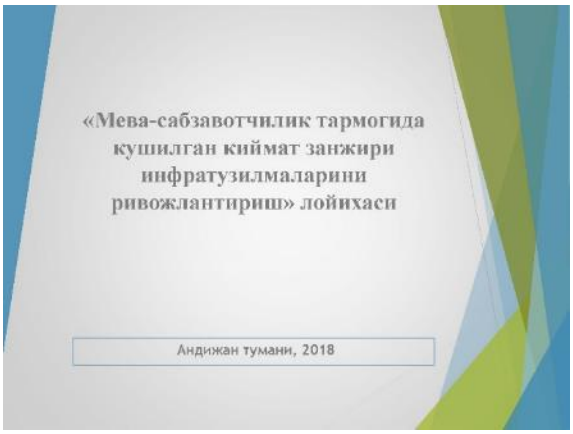
Общественные слушания по проекту: «Развития инфраструктуры цепочки добавленной стоимости в секторе плодоовощеводства». Март 16, 2018

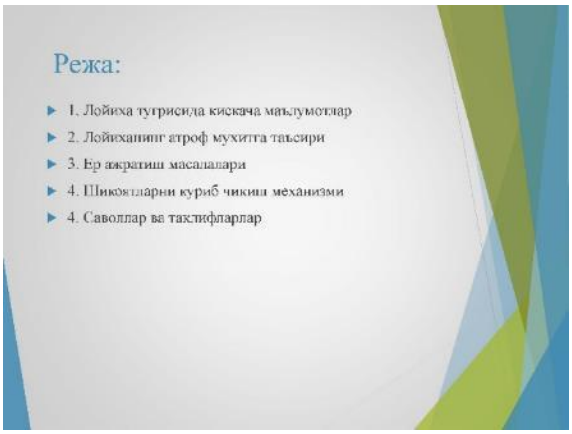
Andijan district / Андижанский район

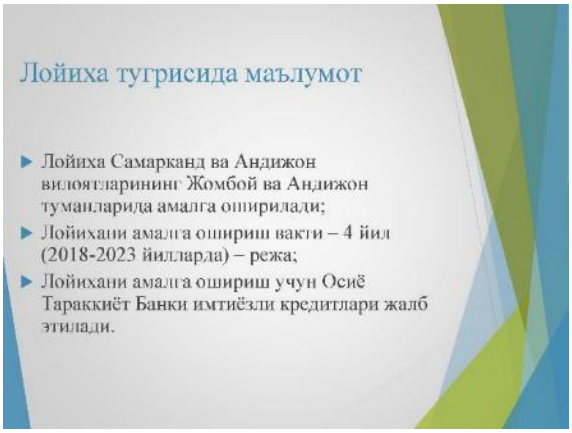
No.	Full Name / Ф. И. О	Worked place / Наименование места работы	Adress / Адресс (КФЙ,МФЙ)	Signiture/ Подпись
51	Низомова Дилдора	Андижон тумани	Кенгаш м.ф.й	[signature]
52	Мустафоев Абдусалом	Андижон тумани	Чортог мфй	[signature]
53	Юлчибоев Боходир	Андижон Туман	Ойланга мфй	[signature]
54	Эргашев Хасанбой	Андижон тумани	Бекобод м.ф.й	[signature]
55	Ўринбоев Ўктам	Андижон т/н электросеть	А. Кўкдамов -35	[signature]
56	Косимов Жахонгир	Андижон Туман	Ок-ёр кфй	[signature]
57	Холдоров Мадор	Андижон туман	Куйганёр мфй	[signature]
58	Маткасимов Улугбек	Андижон туман	Куйганёр	[signature]
59	Махмудова Рано	Андижон тумани	Пистамозор.	[signature]
60	Жўраев Дилшодбек	Анд Туман	Сувокава филиали	[signature]
61	Бакиров Мухаммадзокид	Андижон тум	Туман бош архитектори	[signature]
62	Парпиноев Сарвар	Андижон Туман	„Микрокредитбанк" кўйганёр ф/ч.	[signature]
63	Тулмотов Илхом	Избоскан тумани	„Микрокредитбанк" кўйганёр ф/ч	[signature]
64	Сутов Нодирбек	Андижон туман Иктисод бўлими	Иктисодиёт ва худудни комплекс ривож-	[signature]
65	Сайдахмедов Дилшодбек	Андижон туман хокимият	Хоким биринчи ўринбосари	
66	Исабаев Абдурашид	NBT LLC	г. Ташкент	[signature]
67	LUIS MORENO	MERCASA	MADRID (SPAIN)	[signature]
68	Махмудов М.С.	NBT LLC	г. Ташкент	[signature]
69	Назаров И.	NBT	Ташкент	И.Н
70	Абдувохидов Ж.С	Анд. рай. Статистика	Анд. туман	[signature]
71	Сафаркулов Ж.	Узбекская Андижон тумани		[signature]
72				
73				
74				
75				

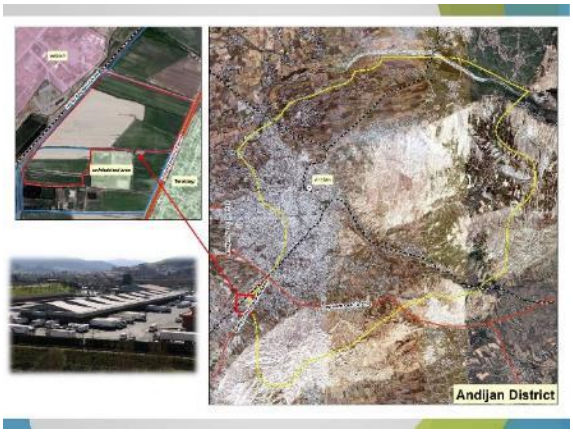
Photos from Public Consultation

Presentation









Агрологистик мажмуани курилиш жараёни

1- боскич

- 2 улгуржи савдо-сотиқ павильони
- махсулотларга ишлов бериш ва қайта ишлаш линиялари
- совуқхоналар/муздатқичлар
- бойхона ва терминал
- техник хизмат кўрсатиш ҳудуди
- Маъмурий бино

2-боскич

- 1ушт махсулотларини сотиш павильони
- Сут махсулотларини сотиш павильони
- Қушимча 2 улгуржи савдо-сотиқ павильон
- Мехмонхона

Улгуржи савдо-сотиқ павильони

Кичик ишлаб чикариш корхоналари

К/х махсулотларини қайта ишлаш (ташки ва ички бозор учун) павильонлар улгуржи савдо-сотиқ павильони

Post Harvest Area

Post Harvest Area

Совукхоналар/музлаткичлар

18 минг кв.м майдонда

30 минг тонна кунига мева ва сабзавот совутиш вамузлатиш кобилияти


Совуқхоналар/музлаткичлар


Маъмурий бино
Умумий майдони – 3000 м²
Ичида офислар, банк идоралар,
ресторанлар, конференц-зал,
магазинлар


información
Lavado Automático
Tiendo
Lavado a Presión
Aspiradores
Aire / Agua


Laboratory
ORANGES
Valencia
10 - 4 LB BAGS
03453120000002527


Dry Port
tmZ
MAERSK LINE


Кушимча худуд кейинги боскичлар учун

Кутиладиган натижалар:

- Мамлакатнинг мева-сабзавот махсулотларини экспорти бўйича салоҳиятини янада ошириш ва ушбу сохага алоқадор томонларнинг самарадорлигини юксалтиришдир;
- Қишлоқ хужалиги хосилининг йиғимдан кейинги исрофини камайтириш ва сифатли хамда барқарор нархдаги мева-сабзавот махсулотларининг узлуксиз етказилиши каби имкониятларни яратиш.

Лойиханинг атроф мухитга таъсири:

- Лойиха босқичлари:
  - Қурилишдан олдин
  - Қурилиш давомида
  - Лойиха ишлар давомида
- Таъсири ургалиладиган объектлар:
  - Атмосфера
  - Сув ресурслари
  - Ўсимлик ва хайвонот олами
  - Тупрок
  - Ижтимоий-иктисодий таъсир
  - Маданий мерос

Атмосфера хавосига таъсири

Таъсирлар:

- Чанг
- Шовқин-сурон
- Вибрация
- Ифлослантирувчи моддалар ташланиши

Атмосфера хавосига таъсири (бирламчи маълумот)

Шовкун сурон улчов натижалари

Атмосфера хавосига таъсири

Чора-тадбирлар:

- Сув сепиб чикиш;
- Машина ва техникани харакатланиш тезлигини меъёрлаш;
- Кум ва шағални ташиб юришда машиналарни брезент билан ёпиш;
- Техникани ишлаш вакти эрталаб соат 7.00 дан кечки соат 7.00 га кадар;
- Шовкин сурон меъёрлардан ошган холатда кушимча чора-тадбир куриш

Сувга таъсири

- Техникани сув манбалари ёнида ювиш
- Каттик чикинди ва чикинди сувларни тозаламасдан сув манбаларга ташлаш
- Техникага ёкилгини куйиш ва мой алмаштиришни сув манбалари ёнида олиб бориш

Лойиханинг сувга таъсири (чора-тадбирлар)

- Ёг махсулотларини, ёкилги моддаларини махсус белгиланган жойларда сакланишини;
- Мой алмаштиришни, техникага ёкилгини куйиш махсус жихозланган участкаларда амалга ошириш
- Оқова сувларни йигилишини ва уз вактида олиб чикиб кетилишни талабга жавоб берадиган равишда ташкил килиниши

Лойиханинг флора ва фаунага таъсири

- Дарахтларнинг кесилиб кетилиши;
- Каналдаги сувни ифлосланиши натижасида аквафауна яшаш мухитининг узгариши

Лойиханинг флора ва фаунага таъсири

- Курилиш ишларини олиб бориш жараёнида дарахтларни кесмасликка харакат килиш
- Чикиндиларни саклаш ва уз вактида бартараф килиш урнатилган тартибда амалга оширилади

Лойихани тупрокка таъсири

- Чикиндиларнинг тартибсиз йигилиб колиши ва худудан уз вактида олиб чикилмаслиги натижасида тупрокнинг курилиш ва маиший чикиндилар билан ифлосланиши
- Огир техниканинг харакатланиши натижасида мавжуд йулларнинг сифати бузилиши
- Тартибсиз равишда карьерларни очиш
- Ер ажратиш масалалари

Ижтимоий-иктисодий мухитга таъсири

- Ахоли яшаш пунктларида техника харакати режасини тузиш.
- Курилиш ишларини бошлашдан олдин, ахоли яшаш пунктини, махалла кумитасини огохлантириш.
- Мактаблар, болалар богчалар ёнидан утадиган йулларда тезликни пасайтириб юриш

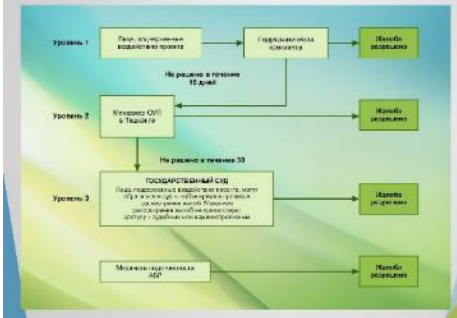
Маданий мъеросга таъсири

- Тарихий ёдгорликларга таъсир
- Табиий ёдгорликлар таъсир
- Кабристонларга таъсир

Шикоятлар билан ишлаш механизми

- Шикоятларни тақдим этиш учун қуйидаги шароитлар яратилади:
  - Қурилиш майдонида шикоятлар қути ва китоби қилиб ташкил қилиниб лойиҳа давомида юритилади;
  - Қурилиш майдончаларда Пудратчи тугрисида тулик маълумот ва мурожат қилиш учун телефон ва манзил стенд куринишда расмийлаштирилади.
  - Жамоатчилик маслаҳатларини ўтказиш.
- Кириш дарвозаси олдидаги кутига ташланган, телефон ёки электрон почта орқали қабул қилинган шикоятлар рўхатга олинади ва қисқа муддат ичида экологик ва ижтимоий масалалар бўйича мутахасисга (ЭИМБМ) юборилади.
- Шикоятлар ЭИМБМ томонидан кўриб чиқилади ва ўрганилади. ЭИМБМ жавоб ва зарур тузатиш чораларини ёзади. Шикоятни қондириш учун 15 кун ичида кўриб чиқилиб, жавоб берилиши лозим.
- Шикоятлар Қишлоқ хужалиги экологик ва ижтимоий масалалар бўйича мутахасис томонидан ҳар бир аудит жараёнида таҳлил қилинади

МРЖ



Эътиборингиз учун рахмат!