Kazakhstan: Syr Darya Control and Northern Aral Sea Phase-II (SYNAS-II)
Addendum to the Environmental Assessment and Management Framework (EMF)

Contents

1. About the current Addendum

1.1 Background

In accordance with the RoK Guideline on the Environmental Assessment of the proposed activities during the pre-planning, planning, feasibility and detailed design stages (2007) which defines the scope of the environmental assessment to be conducted at the feasibility stage of the project development, the Republic of Kazakhstan (RoK) Committee for Water Resources (CWR) under the Ministry of Agriculture has developed a document which consists of two books and is named "Preliminary Environmental Impact Assessment". The first book was developed by Mott MacDonald Euroconsult of the Netherlands in 2008 and updated by "Kazgiprovodkhoz" project institution in 2013 to accommodate the final changes in the project scope. It covers four components that remained after the initial list of activities under SYNAS 2 was reduced. These activities are reconstruction of left bank offtake regulator at Kzylorda barrage, Syr Darya river bed straightening at Korgansha and Turumbet sites, strengthening of the existing dikes at the Syr Daria river. The second book was developed by "Kazgiprovodkhoz" project institution requested by the RoK Committee for Water Resources in 2013 and covers two remaining subprojects- extension of fishery ponds at "Tastak" site of Kamuishlibash fish hatchery in Aralsk district of Kzylorda oblast and the Rehabilitation of Kamyshlybash and Akshatau lake systems. In order to better reflect the nature and purpose of these documents as well as to accommodate the option of further detailing of sub-project specific impacts based on the detailed design, "Preliminary Environmental Impact Assessment" has been renamed as an Environmental Assessment and Management Framework (EMF).

1.2 EMF Rationale and findings

The reason for preparing an EMF at the current stage is that, some of the preliminary layouts and designs provided by SYNAS-2 Feasibility Study (FS) were not based on detailed ground surveys or existing cartography/imagery. Unless on-the-ground survey lines and markers are in place, new works locations and hence environmental impacts would not be easily determined. For example, there are few options of the ditch location for the riverbed straightening works at Korgansha and Turumbet in Zhalagash districts. Similarly, for the Subcomponent 3 it is not clear which particular sections of flood protection dikes approximating 50 km in length shall be reinforced.

At the detailed-design stage, designers need to take on responsibilities for technical correctness of the FS-level designs, and hence will need to review all previous FS work, including checks/updates against current site conditions (which may have changed over the last years since the FS started) and other related technical/ecological factors. This often leads to changes. For example, the river straightening channel alignments could be found to be no longer fully applicable, and the fish hatchery site is a topographically complex (hilly) place for which improved works layouts and changed footprints may warrant to be indicated. Beyond this, for component 2 (fish hatcheries and delta lakes), the detailed designs may cause significant change in the FS-level project design, as to influencing fishery habitats and species-mix selection (e.g. balancing open-access ponds that support employment versus restricted ones that maintain sustainability, safeguarding improved habitat for spawning versus hatchery stocking, stocking predatory species to help regulate native species etc).

The preliminary EMF-level assessment is as follows: the project is expected to have mainly positive environmental and social impacts, including increasing water supply to the NAS and delta lakes, which has been greatly reduced over the past decades, and reducing economic and social impacts associated with seasonal flooding of settlements, infrastructure and agricultural lands upstream. The areas where actual flood protection works are to be carried out are already heavily transformed. The river straightening works will destroy small areas of aquatic/riverside habitat. Two project subcomponents (the increase of water flow to improve the ecological status of delta lakes and reconstruction and the extension of fishery ponds at the Tastak site of the Kamuishlibash fish hatchery) will be implemented at the or in close proximity to IBA and wetland sites in the area of Syr Darya delta lakes and the NAS. The sites of river bed straightening at Korgansha and Turumbet in Zhalagash district and Rehabilitation and improvement of flood protection dikes in Karmakchi and Kazalinsk districts might cause negative impact on natural habitats located in the existing/old river bed. However, the ecosystem degradation, if proven significant (via the subproject-specific EA), will be mitigated by not cutting fully the meanders, leaving meanders open in the downstream and introducing a special flow regime at the meanders. In addition, to outweigh any residual ecosystem destruction, the project detailed design stage may introduce "built in" environmental offsets within the

project area. The exact environmental impact and mitigation measures will be determined through the subproject-specific EIA/EMPs when the (sub) project detailed design is developed, after project effectiveness. The EMF, inter alia, supported the study of the ecosystems flora and fauna in the areas which are most likely to be affected by the project activities, as specified below:

Sub-projects	Subproject sites	Ecosystem characteristic	Common species	Rare/ endangered species
1.	**Reconstruction of left bank offtake regulator at Kzylorda barrage**	Area heavily transformed during the construction of the barrage in 1956	Only few plants of saltworts (Atriplex tatarica, Petrosimonia squarrosa, Salsola nitraria Climacoptera aralensis) and few shrubs and trees (Elaeagnus oxycarapa, Salix songorica, Ulmus pumila). ((Eleocharis acicularis, Panicum crus-gali, Mentha aquatica, Schoenoplectus tabernaemontani)	None
2.	**Syr Darya river bed straightening -"Korgansha" site**	Natural floodplain, with prevalence of reed, hay vegetation, high herns, several bushes and small groups of trees.	Flora: Eleagnus oxycarpa, Salix songorica, Elytrigia repens, Calamagrostis epigeios, Xanthium strumarium, Phragmites australis Fauna: **Birds:** Great egret, grey heron, marsh harrier, barn swallow, magpie; Fish species: grass carp (Ctenopharyngodon idella), silver carp (Hypophthalmichthys molitrix), and spotted silver carp (Aristichthys nobilis); snakehead (Channa argus warpachowskii); Caspian sand-smelt (Atherina boueri caspia); bald goby (Pomatoschistus caucarcus Kawrajsky); **Reptiles:** 2 tortoise species, 23 lizards and 14 snakes species **Amphibians:** diploid Bufo variabilis in the north and the tetraploid Bufo pewzowi,	**Flora**: Glycyrrhizin glabra, Turanga (Populus pruinosa and P. diversifolia) **Fish species**: Possibly extinct- The Syr Darya shovelnose (Pseudoscaphirhynchos fedtschenkoi), The Aral Sea sturgeon (Acipenser nudiventris), Pike-like asp (Aspiolucius esocinus), Aral barbel (Barbus brachycephalus brachycephalus) **Reptiles**: Grey Monitor Lizard and Yellow-Bellied Lizard, Red Wood Snake and Black-Striped Wood Snake
	Syr Darya river bed straightening– «Turumbet» site	Dynamic floodplain with reed, meadows, herbs and bushes.There are abanadoned fields at peninsula	Flora: Phragmites australis, Glycyrrhiza glabra, Elytrigia repens, Fauna. Birds: Common tern, grey and purple heron, pheasant, barn swallow, blue-cheeked bee-eater, marsh harrier, isabelline shrike, roller Fish species: grass carp (Ctenopharyngodon idella), silver carp (Hypophthalmichthys molitrix), and spotted silver carp (Aristichthys nobilis); snakehead (Channa argus warpachowskii);	

			Caspian sand-smelt (Atherina boueri caspia); bald goby (Pomatoschistus caucarcus Kawrajsky); Reptiles: 2 tortoise species, 23 lizards and 14 snakes Reptiles: 2 tortoise species, 23 lizards and 14 snakes Amphibians: diploid Bufo variabilis in the north and the tetraploid Bufo pewzowi,	
3.	**Strengthening of the existing dikes at the Syr Darya river**	Outside the dike solonchak with typical shrub and reed vegetation. Halophytic vegetation. Few abandoned melon fields. Inside the dike, beyond the canal rice fields, large portion abandoned. South of Alseyt (pontoon bridge) outside of dike floodplain vegetation dominated by reed with few shrubs. Beyond the main canal rice fields.	Flora: Phragmites australis, Halostachys, Halimodendron halodendron, Tamarix hispida, T.elongata, T.ramosissima, Suaeda microphylla Fauna. Birds: Marsh harrier, pheasant. Fish species: grass carp (Ctenopharyngodon idella), silver carp (Hypophthalmichthys molitrix), and spotted silver carp (Aristichthys nobilis); snakehead (Channa argus warpachowskii); Caspian sand-smelt (Atherina boueri caspia); bald goby (Pomatoschistus caucarcus Kawrajsky); Reptiles: 2 tortoise species, 23 lizards and 14 snakes Amphibians: diploid Bufo variabilis in the north and the tetraploid Bufo pewzowi,	Flora: Glycyrrhizin glabra, Turanga (Populus pruinosa and P. diversifolia) Fish species: Possibly extinct- The Syr Darya shovelnose (Pseudoscaphirhynchos fedtschenkoi), The Aral Sea sturgeon (Acipenser nudiventris), Pike-like asp (Aspiolucius esocinus), Aral barbel (Barbus brachycephalus brachycephalus) Mammals: Wild boar (Sus scrofa), Sand Cat (Felis margarita); 16 species are listed in the Red Data Book (Bobrinsky Jerboa, Gray Putorak, Pale Pigmy Jerboa, Hepter's Pigmy Jerboa, Sand Cat, Pallas Cat, Marbled Polecat, Goitered Gazelle, Kyzylkum argali (extinct in Kazakhstan), and White-Bellied Long-Eared Bat, Wide-Eared Free-Tailed Bat Reptiles: Grey Monitor Lizard and Yellow-Bellied Lizard, Red Wood Snake and Black-Striped Wood Snake
	Construction of bridge near Birlik settlement in Kazalinsk district	Area heavily transformed since pontoon bridge is already existing	Only few plants of saltworts (Atriplex tatarica, Petrosimonia squarrosa, Salsola nitraria Climacoptera aralensis) and few shrubs and trees (Elaeagnus oxycarapa, Salix songorica, Ulmus pumila). ((Eleocharis acicularis, Panicum crus-gali, Mentha aquatica, Schoenoplectus	None

			tabernaemontani)	
	Reconstruction and extension of fishery ponds at "Tastak" site of Kamuishlibash fish hatchery in Aralsk district of Kzylorda oblast	Area heavily transformed since fishery ponds are already existing	Flora: Salsola orientalis, Anabasis salsa, Artemisia terrae-albae, Poa bulbosa, Eremopyrum orientale, Carex physodes, Ferlua caspica, Halimodendron halodendron, Tamarix ramosissima, T.hispida, T.laxa, Lycium ruthenicum	None
	Rehabilitation of Kamyshlybash and Akshatau lake systems	The lake systems and water-swamp areas in the Syr Darya river delta. There are 8 water bodies (5 lakes and 3 swamps) distinguished in Kamyshlybash lake system. here are 3 water bodies (2 lakes and 1 swamp) distinguished in Akshatau lake system	Fauna: Phragmites australis and Bolboschoenus maritimus mixed with typical plants of swamped areas (Eleocharis argyrolepis, Eleocharis acicularis, Lythrum salicaria, Butomus umbellatus), tall grasses such as Elytrigia repens (Elytrigia, Calamagrostis epigeios, C. pseudophragmites Cynodon dactylon), Solonchaks are covered with vegetation of annual salt-tolerant herbs (Salicornia and Salsola spec.) and shrubs (Anabasis salsa, Halocnemum strobilaceum, Halostachys belangeriana). Black saxaul (Haloxylon aphyllum), tamarisk (Tamarix hispida and other spec.) and reed (Phragmites australis); Fish species: 34 species, including about 20 local species and 14 naturalized flounder (Platichthys spp), Aral roach, bream, Aral carp, pike-perch, pike-aspMammals: 67 mammals, including 6 species of insectivores, 10 bats, 33 rodents and hares, 13 carnivores, and 5 ungulates Reptiles: 2 tortoise species, 23 lizards and 14 snakes Amphibians: diploid Bufo variabilis in the north and the tetraploid Bufo pewzowi, sea frog (Rana ridibunda)	Flora: Glycyrrhizin glabra, Turanga (Populus pruinosa and P. diversifolia) Fish species: Possibly extinct- (The Syr Darya shovelnose (Pseudoscaphirhyncho s fedtschenkoi), The Aral Sea sturgeon (Acipenser nudiventris), Pike-like asp (Aspiolucius esocinus), Aral barbel (Barbus brachycephalus brachycephalus)); Turkestan barbel (Barbus capito conocephalus) Mammals: Wild boar (Sus scrofa), Sand Cat (Felis margarita); 16 species are listed in the Red Data Book (Bobrinsky Jerboa, Gray Putorak, Pale Pigmy Jerboa, Hepter's Pigmy Jerboa, Sand Cat, Pallas Cat, Marbled Polecat, Goitered Gazelle, Kyzylkum argali (extinct in Kazakhstan), and White-Bellied Long-Eared Bat, Wide-Eared Free-Tailed Bat Reptiles: Grey Monitor Lizard and Yellow-Bellied Lizard, Red Wood Snake and Black-Striped Wood Snake

Based on the EMF findings, the project is expected to cause loss of small areas of riverine and floodplain habitats, and to have long term positive impacts on the NAS and delta lakes. The Syr Darya River and its floodplains have lost much of their biodiversity function during the last five decades. This loss concerns at the first place the landscapes and ecosystems. Those because of and depending on the river dynamics were transformed in a large scale or disappeared over large areas. Satellite images show that the river has changed its course numerous times throughout the history. The dynamics of the flow and sedimentation were influenced by numerous dams and dikes. The entire complex of tugai ecosystems, including reeds,

meadows, shrublands and forests was reduced by size and degraded in its ecosystem functions and diversity. Large areas became temporarily used for agriculture, and once abandoned, they currently need long periods for fragmentary rehabilitation. The number of animal species depending on healthy river ecosystems dropped and the dominance of various plant species shifted. Remaining natural areas are particularly significant for conservation. Therefore, detailed design stage EIAs and EMPs shall pay particular attention on these areas.

Water Resources Committee has applied for clearance of the feasibility study and the "Preliminary Environmental Impact Assessment" by the RoK State Environmental Expertise under the Ministry of the Environmental Protection and has received a positive resolution in May 2013. Resolution stated that the project will have a limited negative impact on some areas of vegetation, flora and fauna. The extent of impact will be precisely defined at the stage of detailed design, e.g. when choosing the dikes for reinforcement and reconstruction along the Syr Darya river. It is considered that (insignificant) loss of natural habitats due to project activities will be offset by site specific mitigation measures defined at the detailed design stage, reflected in the Environmental Screening Form (ESF) (please see Annex A) and accounted for in the site specific EMPs. According to the implementation provisions such documentation as EIAs, ESFs and EMPs are the subject for the clearance by the World Bank environmental specialist. Greater details for the procedures for sub-projects' screening and preparation of sub-project specific EIAs/EMPs are presented below in Sections 2 and 3, and Annex A.

Overall, SYNAS 2 will have a positive impact on land use opportunities and the environmental revival of the North Aral Sea (NAS) and the delta area. In particular:

- Due to project Component 1, NAS water levels would be relatively stabilized due ensuring an average water inflow of 3000 cubic meters per year. The water level will remain at the mark of around 42 m (BSL) ;
- Water salinity levels in the Syr Darya Delta area are projected to go down to 4-10 g/l which will have a positive impact on related fish species and animals;
- Soil salinity at the delta areas and NAS is projected to decrease, improving the possibilities for the growth of nutrient-rich plants and improving the quality of 18700 hectares of pasture lands;
- Water quality is projected to improve (more Dissolved Oxygen, more water transparency) due to the increase in inflow of the fresh water;
- It is expected that some of the original food chains in NAS will be restored, having a positive impact not only on fish and other aquatic organisms, but also on local and migratory waterfowl.

The framework-level EMP presented in Section 3 summarizes the general mitigation measures and costs.

1.3 Purpose of the Addendum to the Environmental Assessment and Management Framework

Current Addendum was developed with the purpose of:

1) **Consolidating the previous assessments and implementation arrangements**
   It is necessary to update and consolidate parts1 and 2 of the EMF since they were produced at different times (part 2 relating to two recently added subprojects- reconstruction and extension of fishery ponds at "Tastak" site and Rehabilitation of Kamyshlybash and Akshatau lake systems). In addition, it should be noted that there is an evidence that SYNAS 2 Feasibility Study and the associated 2-volume "Preliminary Environmental Impact Assessment" was granted a positive resolution by the State Environmental Expertise under the RoK Ministry of the Environmental Protection in May 2013, as well as the related approvals from the regional and local regulatory bodies. Making changes in the already approved documentation is a very lengthy and complicated process. Therefore, changes related to implementation arrangements, environmental screening and review process and any improvements to the EMF are explained in the current document. The provisions of the current document are agreed with the client and shall be disclosed at the web-site of the RoK Ministry of Agriculture. The implementation arrangements mentioned in the Addendum aim at ensuring the good quality of site specific EIAs and EMPs.

2) **Explaining the rationale and the process for undertaking site-specific EIAs/EMPs.**
Site specific information, such as specific layout of civil works (number and type of equipment, location of camp sites etc.), the timing of proposed activities, the exact layout of river bed straightening, the quantity of required material and the location of borrow pits, number of contractors, location of hydraulic water supply and disposal infrastructure systems in the delta area, will only be available at the stage of the detailed design. Thus, another purpose of the current paper is to determine the scope and the process for undertaking site-specific EIAs/EMPs.

3) **Presenting the new project scope in view of the OP 4.37 Safety of dams.**
The project scope has been revisited since the time of the preparation of the EMF, which affected, in particular, the triggering and interpretation OP 4.37 'Safety of Dams'. Thus, this document presents the updated and revised project and associated dam-safety descriptions, based on the dam safety assessment updated in October 2014. The summary is given in the related OP4.37 section below.

4) **Taking record and addressing questions raised at the the public consultation held on October 14, 2014 on the LAF and EMF.**
The Minutes of the Public Consultations on the LAF and the EMF is given in the Annex B

1.4 Project description

The project comprises three components, all relating to bulk water management improvements in the lower Syr Darya river basin located in the Kzylorda region of Kazakhstan. Although the approximate locations of the project sites are defined, the sub-project area of influence and specific layout of civil works (number and type of works/equipment, location of camp sites etc.) for those sub-projects where the new infrastructure will be developed will only be determined at the detailed design stage. The project components include the following::

(a) Component 1: Increasing the water conveyance and flood protection capabilities of the lower Syr Darya river (US$ 41.6 million). This component contributes to the realizing of the goal to increase the lower Syr Darya river mean winter flow conveyance capacity from 500 to 700 m3/s, thus achieving reduced flood water losses (for improved instream and environmental water provision in winter including supply to the Delta Lakes and NAS). It also provides for the protection against flooding of vulnerable settlements, developed and cultivated lands, and valuable civil infrastructure assets (including roads, railways, power transmission lines, and irrigation and drainage water conveyance systems). It includes the following four subcomponents:

(i) Repair and rehabilitation of the left bank irrigation offtake at Kzylorda barrage in Kzylorda city, the largest structure in the system (210 m3/s discharge capacity). This follows previous similar completed interventions for the right bank offtake and for the barrage itself, and involves structural, electromechanical and protection works to:
- prevent failure of heavily damaged and seriously deteriorated components of the offtake, and thus to prevent inundation of the service areas and damage to corresponding civil infrastructure systems;
- secure and enhance the delivery of water to, and hence the agricultural production from, the irrigated agriculture service area of over 60,000 ha and extensive pasturelands beyond; and
- secure the capability of the offtake to serve as a flood diversion structure when needed for Kzylorda city flood protection purposes.

(ii) Construction of riverbed straightening works at Korgansha and Turumbet in Zhalagash district, comprising provision of two meander cutoffs totaling 4 km in length. Each of these involves excavation of a central pilot ditch and formation of guiding dikes on both sides, allowing the river to form its own new course between them, all to:
- increase river conveyance capacity through increased river slope and flow velocity, and through elimination of channel constrictions that lead to formation of ice jams;
- reduce the loss of winter flood flows into adjacent desert sinks, and hence enhance environmental water supply to downstream systems;

- allow for greater flow releases from upstream reservoirs, and hence improve flexibility of overall system multipurpose water management; and
- provide needed flood protection to high risk areas and assets.

(iii) Rehabilitation and improvement of flood protection dikes in Karmakchi and Kazalinsk districts, totaling 50 km in five sections. This involves the strengthening and/or reconstruction of damaged and/or deteriorated dikes to:
- secure protection against flooding of vulnerable settlements and irrigated agricultural lands; and
- increase river flow capacity and water retention characteristics for augmented discharges to downstream systems.

(iv) Construction of road bridge river crossing near Birlik in Kazalinsk district, of 265 m length in six spans. This is for replacement of an existing floating pontoon bridge of 70 m length, in order to:
- remove a significant river channel constriction, through a channel width restoration from 70 m to 200 m, replacement of multiple pontoons by five slender bridge piers, and raising of the bridge deck from the water surface to a height of 3 m above design maximum water level, all for greatly reducing the potential for ice jams formation and substantially increasing river flow conveyance capacity. These works are deemed a restoration of the river channel, rather than altering/widening it. Spurs were extended into the river for the pontoon bridge, creating the constriction, thus these would be removed by this subproject (however, flood embankments to be built at the new bridge location are set relatively back from the original shoreline, thus limited widening will take place); and
- provide a major district-level road access and transportation improvement, through upgrading of the present seasonally-operated (10 mth/yr) restricted-weight (5 tonne) restricted speed (5 km/hr) and single-lane (4.5 m) bridge to a permanent Category III two-lane (11.5 m) vehicular and pedestrian traffic bridge, thus substantially enhancing local socio-economic development potential.

(b) Component 2: Improving water provision and management in the Syr Darya middle delta lakes area (US$ 77.9 million). This component provides for the improvement of the water supply, distribution and usage conditions to and within the middle delta lakes area adjacent to the NAS at the lower end of the Syr Darya river. This is with a view to enabling beneficial use of the improved land and water environment resulting from the previous project and of the improved water availability and regulation expected from Component 1 of the present project. The following two subcomponents are included:

(i) Rehabilitation of Kamyshlybash and Akshatau middle delta lake systems in Aralsk district, comprising improvements to water management and other service infrastructure systems serving a total area of 110,000 ha including lakes, swamps, hayfield lands and pasturelands. The interventions include rationalization and consolidation of water diversion, conveyance, regulation and control systems to
- improve water management system effectiveness and operational efficiency through the securing of the Amanotkel-2 river barrage and the provision of adequate and permanent hydraulic structures and conveyances, replacing large numbers of makeshift intakes and temporary canals; and
- enable through these and other selected but limited infrastructure improvement interventions (e.g. electricity supply and road access), a revival of the middle delta area's rural economic activities (e.g. fisheries, animal breeding, and hay and reeds harvesting for livestock fodder and dwellings) and biodiversity"

(ii) Reconstruction and extension of Tastak fishery ponds at Kamyshlybash fish hatchery in Aralsk district, involving restitution and provision of a total of about 120 fishponds over almost 250 ha, together with all corresponding hydraulic water supply and disposal infrastructure systems and other needed items. This is to enable augmented and accelerated fish hatchery operations for the stocking with appropriate fish species of the middle delta lakes in the first instance, and then of other recovered water bodies including the NAS. It is expected that this should then generate potential for increased fish production, fishery-dependent employment and socio-economic advancement.

(c) Component 3: Enhancing river basin management, preparing the SYNAS3 project, and project coordination (US$ 5.7 million). This component comprises three subcomponents as follows:

(i) Preparation of the feasibility study and detailed designs for the SYNAS3 project, covering in particular the second phase of restoration of the NAS and the development of the River Basin Management Center designated for Kzylorda.

(ii) Strengthening of the Government capacity in River Basin Management (RBM) (final scope to be finalized by the negotiations): involving the developing of river basin modeling and monitoring tools for holistic and integrated water management, covering all water use sectors including environmental and ecological. These include provision and installation of new hydroposts and refitting of gauging stations; further development of the Mike 11 river basin model that already exists in the country and was used during preparation of the SYNAS2 project; and/or development of a Decision Support System (DSS) using state-of-the-art approaches such as open-access sources (using SYNAS2 funds but also possibly complementary funds through support from the ongoing Central Asia Energy-Water Development Program, CAEWDP). During the SYNAS2 project period these tools are to be developed and used up to the level needed to reasonably and adequately support the NAS restoration feasibility study, sufficient for the preparation of the SYNAS3 project under the above Subcomponent 3(i). It is then intended that, during the SYNAS3 project period, these tools would be applied and further developed as necessary to provide input and support to ongoing water management system operational decisions, as part of the establishment of the Kzylorda River Basin Management Center.

(iii) Project management, monitoring and evaluation (M&E), audit and training.

1.5 Environmental Offsets and compensatory measures

Depending on the findings of sub-project specific EIAs and EMPs, the need for the environmental offset and compensatory measures will be determined to mitigate the anticipated impacts on natural habitats. The purpose of environmental offsetting is to counter-balance the unavoidable impacts that subproject activities will have on biodiversity. It is a way to ensure that development causes no net loss, by enhancing the state of biodiversity elsewhere. Offsetting considers and addresses the impacts that sub-project activities have on biodiversity, after first avoiding, minimizing and remedying any negative effects.

1.6 Implementation arrangements

Both PMU and PIU are established under the same body – Committee for Water Resources. The PMU is a central implementing agency which has the overall responsibility for the project implementation. The PIU is an agency based in the project area in Kzylorda, in order to ensure close on-site supervision of contractors. The project implementation hierarchy is shown in the chart below

All project participants will follow the environmental review process presented below.

STEP 1: The PMU, on the basis of the Environmental Screening Form (please see Annex A), determines the environmental category for each sub-project and seeks World Bank approval and guidance on the proposed category and on the scope of the required environmental due-diligence document. In order to fulfill any

local and national environmental review requirements (such as EIA and/or other official approval/permits), the PMU initiates discussions with the authorized body. It will be the responsibility of the PMU to obtain the appropriate permits and licenses as required by national law. These requirements are considered separate, but parallel, to those presented here and satisfying them is the responsibility of the PMU.

STEP 2: The PMU develops the list of follow-up requirements/needs studies for the development of sub-project specific EIAs/EMPs processing, e.g. vegetation survey

STEP 3: The PMU, or its consultants, prepares site-specific EIAs/EMPs, as part of the detailed design documentation for each sub-project. The PMU is responsible for obtaining a positive EIA report resolution granted by the CEP or authorized body, and other permits as stipulated by the applicable Environmental Regulations for the activities under Category B +.

STEP 4: The PMU incorporates the recommendations provided in the analysis into the Sub-Project design and implementation plan, including associated estimated costs.

STEP 6: The PMU finalizes the Sub-Project documentation package. Sub-project specific EMPs will be part of the bidding documentation for respective sub-projects.

STEP 7: The PIU monitors the implementation of site specific EMPs, and reports to the PMU on a monthly basis. The PMU reports on implementation of EMP in the regular quarterly project progress reports to the World Bank, or more frequently if requested by the Bank.

Prior and Post-Review – WB/PMU. Environmental evaluations and review procedures will be subject to review by the WB specialists. WB will : a) advise the PMU as needed and provide clearance to the proposed environmental category and required scope of the environmental due diligence document; b) perform prior review and provide clearance of all sub-projects falling in B+ requiring full EIA and EMP; c) perform post review for all other projects. For that reason all environmental due diligence documentation for prior reviewed sub-projects will be prepared in English and local language. The purpose of this is to ensure that: the work was of satisfactory quality, community participation took place when appropriate, the appropriate recommendations were made, all documentation was properly filed and recorded, and that the conditions of approval by the Committee for Environmental Protection (CEP) under the RoK Ministry of Energy or other relevant agencies were met. During the project implementation, the PMU, together with the PIU, will have the overall responsibility for the implementation the EMF provisions and mitigation and monitoring measures identified by site-specific EMPs. The PMU's Monitoring and Evaluation team will also review the environmental documentation, as part of the overall monitoring and evaluation of the project performance. All this documentation should be kept on file by the PMU as needed.

Contracts

Construction contracts and Bills of Quantities will include clauses for the implementation of site-specific EMPs, such as appropriate disposal of unacceptable construction material and disposal of construction waste. Procurement documents will incorporate respective clauses of site-specific EMPs, such as restriction to use environmentally unacceptable materials. Bidding documents will include respective site-specific EMPs, which shall also become an integral part of the civil works contracts. To assure a degree of leverage on the Contractor's environmental performance an appropriate clause will be introduced in the works contracts, specifying penalties in case of noncompliance with the contractual environmental provisions, e.g. in the form of withholding a certain proportion of the payments, its size depending on the severity of the breach of contract.

1.7 Safety of Dams (OP4.37)

While SYNAS2 will not finance dam safety works/equipment, the OP4.37 on Dam Safety is triggered to address the safety and operation of the Shardara dam in conjunction with the Koksaray reservoir, including funding a Panel of Experts formed by two panelists (geotechnical and hydrology) and preparing/updating the dam-safety plans. The dam safety assessment updated in October 2014 for the purpose of SYNAS2 appraisal determined there are two critical issues: (A) the dam-flood retention capacity has been reduced to the extent that a 1:50 to 1:100 year flood could cause serious damage downstream Shardara dam; and (B) the downstream embankment may need to be reinforced to withstand seismic effects.

Thus there is an urgent need to undertake the following safety measures to protect people and assets downstream:

(1) Project years #1 to 2: Immediate non-works measures which can be supported by SYNAS2 and by Government parallel financing: Surveys and studies (e.g. updating the dam-failure analysis, divers survey to test bottom-outlet vibration, bathymetric to update sedimentation/live storage), and thereupon, modeling/DSS for Shardara/Arnasay/Koksaray/NAS, hence updating the Emergency Preparadeness Plan (EPP) and Operations and Maintenance (O&M) plan aiming at operating Shardara-Koksaray complex mainly in a flood-control mode throughout the coming few years (until an additional spillway is built); and then,

(2) Project years #3 to 5: Works under SYNAS3 or Government parallel financing (to be determined by SYNAS2 negotiations): build an additional emergency spillway with capacity of at least 1,500 m3/sec (withstands at least a 1:1000 year flood, costs around 120 million US$), in addition to reinforcing the embankment both downstream the main Shardara dam and also (if possible) downstream the dam separating Shardara and Arnasay lake.

Meanwhile, before completing the above EPP and adjusting the Shardara-Koksaray operation temporarily to withstand floods until the spillway is built, some SYNAS2 civil works may safely start for the subprojects which are located far (400 km) downstream the dam hence not likely prone to serious flooding (the fish hatchery, delta lakes works, and possibly the bridge). The indicative dam-failure analysis suggested that, upon having a catastrophic flood, after 400 km the inundation depth is within 0.5-1 meter, and the wave needs at least 3-4 days to reach these SYNAS2 sites, which is adequate to evacuate the inhabitants.

The Government commitment to undertaking the immediate measures (surveys, modeling, adjusted dam operation) that prove to be outside the influence/budget of SYNAS2 would be reflected through introducing related legal covenants or disbursement triggers, particularly bound to SYNAS2 subproject areas that are prone to flooding (to be determined at SYNAS2 negotiations).

2. Environmental review process

EMF provisions building on the findings of the preliminary EIA summarized above were developed to describe procedures related to environmental screening of sub projects at the detailed design stage and to outline the roles and responsibilities of PMU, PIU and the World Bank.

2.1 Environmental Screening Categories

Environmental Screening is the first step in the environmental due diligence process of reviewing subproject activities. The purpose of environmental screening is to determine the environment risk associated with the proposed sub-project based on the detailed design documents, reject activities which are unacceptable due to their nature, classify acceptable activities by environmental categories and identify the type of environmental due diligence document that will be required.

The screening procedure will apply to subproject activities under SYNAS 2 that will include repair and rehabilitation activities at the Kzylorda barrage and flood protection dikes in Karmakchi and Kazalinsk, excavation of ditch and formation of the new guiding dikes, decommissioning of the existing pontoon bridge and construction of the Category III two-lane (11.5 m) vehicular and pedestrian traffic bridge, provision of adequate and permanent hydraulic structures and conveyances, replacing large numbers of makeshift intakes and temporary canals at Kamyshlybash and Akshatau middle delta lake systems, infrastructure improvement interventions (e.g. electricity supply and road access), restitution and provision of a total of about 120 fishponds over almost 250 ha, together with all corresponding hydraulic water supply and disposal infrastructure systems

The site specific screening and review would carefully assess the following issues:

- Destruction of vegetation and fauna at the immediate project sites;
- Loss of fertile soil and vegetation, during the excavation activities;
- Loss of the biodiversity related to changes in the river flow and elimination of regular flow at the old river bed
- Fuel wood cutting, disturbance of wild animals and poaching.

- Dust, noise and vibration due to the demolition and construction;
- Risk of damage to unknown historical and archaeological sites;
- Dumping of construction wastes and accidental spillage of machine oil, lubricants, etc.
- Solid and liquid wastes associated with construction camps;
- Risk from inadequate handling of waste; and
- Potential requirements, if any, for involuntary resettlement or temporary relocation of a limited number of affected persons during construction activities.

Results of the Environmental Screening shall be reflected in the Environmental Screening Form the PMU will fill in to determine the environmental category of proposed sub project. The screening form should describe relevant aspects to be addressed in the course of assessment, especially when dealing with vulnerable habitats and water pollution. Environmental Screening Form will also define the type of environmental due diligence report to be prepared and which additional information is required if any. The Environmental Screening Form shall be cleared with the Monitoring and Evaluation team.

The form includes the following categories:

Category A activities which will not be financed by The World Bank
A proposed sub-project is classified in this category, if it is likely to have highly significant, diverse, and/or long-term adverse impacts on human health and natural environment, the magnitude of which is difficult to determine at the sub-project identification stage. These impacts may also affect an area broader than the sub-project sites. Measures for mitigating such environmental risks may be complex and costly. If according to filled Environmental Screening Form the project is characterized by environmental sensitivity of the planned location, nature and magnitude of impacts as high magnitude, it shall also be excluded.

Category B+ activities which may be supported, subject to positive EIA conclusion by the Committee for Environmental Protection (CEP) under the Ministry of Energy or include projects with short term environmental impacts (EIA report and/or EMPs required)
These would include sub-projects which may have significant, negative and/or short-term environmental impacts, the magnitude of which are difficult to determine at the feasibility and design stages. An EIA (if recommended by the CEP or local executive authorities of provinces or cities) otherwise EMP (templates are included as Annexes in the feasibility stage EIA Report) shall be prepared by the PMU. The costs of the mitigation measures would be included in the EIA / EMP and incorporated in the tendering documentation if applicable. If PMU determines that it is not easy to classify the project, it will seek for advice by the World Bank environmental specialist.

EIA/ EMPs for B+ Category subprojects under SYNAS 2 shall particularly specify the mitigation measures and cost of mitigation for construction, rehabilitation, excavation works and transportation of the equipment in the natural habitats including critical habitats as per World Bank OP 4.04. It shall insure that any works related to shrub clearance and tree felling are implemented outside the nesting season, any excavation and bed straightening works-outside of spawning season. It shall also give a particular attention to the areas previously located along the river bed but which due to the nature of proposed activities will be abridged from the permanent provision of water. The special water regime shall be implemented in such areas.

Category B- activities which may be financed (EIA and EMPs required)
This category includes Sub-Projects which may have intermediate levels of regular and accidental emissions and typical simple construction related impacts.

Category C activities which may be financed through the sub-lending scheme
These would include sub-projects whose environmental impacts are expected to be negligible, for which no EIA or EMP would be required.

2.2 Environmental Impact Assessment – Environmental due diligence documents

An Environmental Impact Assessment (EIA) is a process conducted by the PMU to identify, predict, evaluate, and mitigate the environmental impacts and risks which may arise from the proposed Sub-Project. The purpose of the EIA is to recognize environmental impacts/consequences early in the sub-project preparation process, so that they can be incorporated into the sub-project design. The scope of EIA will depend on the type of activities and the environmental category attached to each Sub-Project, though the purpose of any type of assessment is to identify ways of environmental improving the proposed activities by minimizing, mitigating, or compensating for their adverse impacts. An Environmental Management Plan alone will serve as environmental assessment report or should be made an integral part of an environmental assessment report, which lists environmental risks related to the specific types of sub-project activities and prescribes mitigation measures. EIAs identify ways of improving sub-projects environmentally by minimizing, mitigating or compensating for adverse impacts. An EIA would also describe the steps that were taken for public consultation.

For Category B +
One type of documents might be required:

a) A full EIA would be required for Category B+. The EIA will be prepared according to national regulation and will undergo national approval system. If gaps in the content of EIA are noticed, the EIA will be updated to fit WB standards. In addition, to EIA the borrower will prepare EMP. This implies two public disclosures requesting comments (first on the scope EIA and second on the draft) followed by public consultation of both EIA and EMP. The documents will be prepared in English and Russian.

For Category B + projects the site-specific River Habitat Surveys (RHS) including vegetation, animals and fish species might be required to conduct the proper assessment.

For category B – three possible types of environmental due diligence is expected

a) EMP will be prepared for category B - subprojects which include extensive reconstruction of the existing facilities, infrastructure and other. EMP will undergo one public disclosure and consultation. EMP will be prepared in English and local language. Content of the EMP is defined in annex to the current EIA Report.

b) EMP checklist will be prepared for small scale rehabilitation. The document will be publically disclosed requesting written comments. Sample of the EMP checklist for rehabilitation is presented in to the current EIA Report. EMP checklist will be prepared in local language.

3. Site-specific Environmental Management Assessment and Plans (EIAs/ EMPs)

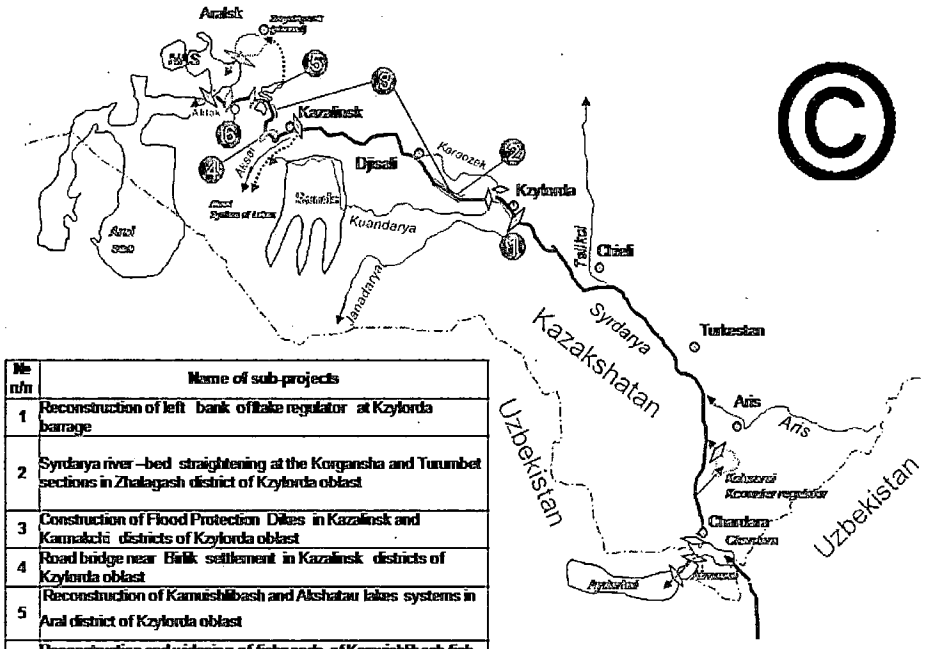
3.1 The scope and the content of the site specific EIAs/ EMPs

The overall project area of the SYNAS-II includes:

- the floodplain of the Syr Darya between the Shardara reservoir and the Aral Sea including the Delta lakes;
- the NAS;
- Delta lake systems;

The locations of subprojects are shown in the figure below.

KAZAKH SYRDARYABASIN



№ n/n	Name of sub-projects
1	Reconstruction of left bank of lake regulator at Kzylorda barrage
2	Syrdarya river –bed straightening at the Korgansha and Turumbet sections in Zhalagash district of Kzylorda oblast
3	Construction of Flood Protection Dikes in Kazalinsk and Kamakshi districts of Kzylorda oblast
4	Road bridge near Balik settlement in Kazalinsk districts of Kzylorda oblast
5	Reconstruction of Kamyshlibash and Akshatau lakes systems in Aral district of Kzylorda oblast
6	Reconstruction and widening of fishponds of Kamyshlibash fish hatchery in Aral district of Kzylorda oblast

The Environmental Assessment and Management Framework establishes the procedures for the development of sub-project specific EIAs and EMPs. The PMU will screen sub-projects to identify sub-project category. For the projects assigned category B+ and below, the designers will be responsible for the development of such specific EIAs and EMPs, as part of sub-project design documentation. The RoK Guideline on the Environmental Assessment of the proposed activities during the pre-planning, planning, feasibility and detailed design stages (2007), defines that the detailed design stage environmental impact assessment should include a detailed analysis of the impact from particular facilities or activities. This is also in line with the requirements of the World Bank OP 4.01. Particularly in relation to the SYNAS 2 Project, the following aspects will be taken into consideration for each proposed sub-project:

Surface waters

- hydrographic characteristic of the sub project sites;
- the characteristic of the Syr Daria river using of the data from the closest observation posts;
- the hydrological, hydrochemical, ice, thermal, velocity modes of a water stream, alluviation, natural phenomena such as floods, ice jams and blizzards;
- establishment of the sanitary protection zones the sub project sites
- quantity and the characteristic of the waste water (with the indication of the point of the discharge, design features of the discharge points, the list of the polluting substances and their concentration);
- justification for the reasonably practicable waste water reuse & recycling systems and treatment facilities;
- proposals for achievement of the maximum-permissible discharges which should include the following:
    - assessment of impact of the planned facilities on the water environment during construction and operation, including possible thermal pollution from water discharges and consequence of impact of water withdrawal on ecosystems;
    - assessment of changes in river bed mechanics from construction of canals and constructions of bridges and identification of negative consequences;
- water protection measures, their efficiency, cost and sequence of implementation;

- environmental monitoring of a surface waters.

Land and soil

- state and condition of land use, land balance of the territory planned for construction and adjacent farms according to a type of property, the proposed changes in land management, calculation of potential loss of agricultural production and economic loss of the land users (owners) who are the subject to compensation;
- the characteristic of the current soil cover in the sub project area of influence (the soil map with the land quality score, water table, physical and chemical properties, pollution, disturbance, erosion, deflation, fertility and mechanical structure of soils);
- the characteristic of the expected impact on soil (mechanical violations such as excavation, chemical pollution), change in soil properties at the subproject area of influence as a result of a change in geochemical processes, creation of new landscape caused by replanning of the surface, activation of new natural processes, pollution by the wastes of production and consumption;
- the planned actions and design solutions in the subproject areas of influence on:
  - removal, transportation and storage of the fertile layer of the ground and overburdens;
  - preservation and storage of the soil cover at the sites which are not directly affected by activity
  - restoration of the disturbed soil cover and restoration of the subproject area to the condition suitable for primary other use (technical and biological recultivation);
- environmental monitoring of soil.

Vegetation

- definition of an area where vegetation is affected by the planned activity;
- expected changes in a vegetable cover (specific structure, condition, efficiency of communities, an assessment of adaptability of genotypes, economic and functional value, pollution, damage by pests)
- current state of the vegetative cover in the area affected by the sub-projects (geobotanical map, floristic structure, functional value, efficiency of vegetative communities, their natural dynamics, existence of medicinal, rare, endemic species of plants and species of plants included in the Red Book, pollution and damage to plants; successions resulted from modern anthropogenic impact on vegetation);
- characteristic of the impact that the subproject facilities and the facility and the accompanying facilities have on vegetation communities of the territory, threat to rare, endemic species of plants in an affected area;
- the size of area affected by the sub-project and consequence of these changes for life and health of the population;
- recommendations on preservation of vegetation communities, improvement of their condition, preservation and reproduction of flora, vegetation offset measures;
- proposals on monitoring of a vegetative cover.

Fauna(mammals, fish species, avian species, reptiles and amphibians)

- baseline description of water and land fauna (mammals, fish species, avian species, reptiles and amphibians);
- existence of rare, disappearing animal species and species included in the Red Book;
- characteristic of the facility's impact on specific structure, quantity of fauna, its gene pool, habitat, conditions of reproduction, ways of migration and places of concentration of animals in the course of construction and operation, assessment of adaptability of species;
- possible violations of integrity of natural communities, habitats, conditions of reproduction, impact on ways of migration and places of concentration of animals, reduction of their specific variety in a sub-project area of influence, assessment of consequences of these changes and the damage caused to the environment;
- actions for preservation and restoration of the integrity of natural communities and specific variety of water and land fauna, possible offset measures;
- fauna monitoring program.

Assessment of the environmental risk

- value of ecosystems (biological value, ecological value, functional value, specially protected areas), resistance of allocated landscapes to the impact of the planned activity;
- probability of emergencies (taking into account a technical level of the facility and existence of natural hazards), sources, types of emergencies, their regularity, an affected area are defined;
- forecast of the consequences of potential emergencies for the environment and people;
- assessment of the inevitable damage caused to the environment and health of the people as a result of the planned activity, in the form of estimates of standard payments for special environmental use, and calculations of the amount of possible compensation payments for the excess damage to the environment as a result of possible emergencies, calculations of technologically and statistically reasonable compensation payments, which are used for determination of the sizes of an ecological insurance;
- recommendations on prevention of emergencies and elimination of their consequences;

In accordance with the provisions of the project EMF, and based on the findings of the detailed environmental impact assessment at the detailed design stage, the site-specific EMPs would identify measures to mitigate the specific adverse environmental impacts relating to construction and functioning of the project facilities, which may include:

- Pollution of surface waters by sediments from structural works on existing barrages , ditch excavation, formation of additional protection structures such as dikes, channel width expansion, removal of existing bridge structures and construction of new bridges, development and operation of the new fish ponds and construction of associated infrastructure
- Impact on biodiversity: cutting of vegetation during site clearing
- Pollution of soil and surface water spills of fuel, oil and lubricants;
- Impact on health of workers and local population, engaged in construction and operation of mechanisms;
- Increased traffic, dusting, effluxes, noise and vibration from operation and repair of vehicles and mechanisms.

The potential mitigation measures to be implemented by the project would be aimed at:

- Preservation of flood plain ecosystems and minimizing negative effects from river straightening
- Preservation of rare species of plants and animals
- Minimization of water pollution from construction activities
- Minimization of water pollution from the fish ponds
- Foreseeing creation of safe and healthy conditions facilitating the work and excluding breakdowns and accidents, provision of labor safety rules with the correct choice and technically sound sizes of work places and their arrangement;
- Introducing new effective materials and constructions, technologies of works execution in construction;
- Site fencing, providing access to work places and residential areas during construction;
- Environmental provisions incorporated into contracts for construction and supervision;
- Implementing traffic safety measures;
- Timely clearing of the site from construction wastes, and disposal of excavations only in the places established by monitoring bodies;
- Post-construction site cleanup and rehabilitation.

Where applicable site/subproject specific EAs/EMPs under SYNAS2 shall specify the mitigation and monitoring measures, and the cost of mitigation including construction, rehabilitation, excavation works and transportation of the equipment in the natural habitats, including critical habitats as per World Bank OP

4.04. These EMPs shall ensure that any works related to shrub clearance and tree felling are implemented outside the nesting season, any excavation and bed straightening works outside of spawning season. It shall also give a particular attention to the areas previously located along the river bed but (which due to the nature of proposed project activities) will be abridged from the permanent provision of water. For instance, the EMP may determine that a remedial water-provision regime may be implemented to offset such areas. Subproject specific EIAs/EMPs shall also pay a close attention to water pollution from the fish ponds.

3.2 Capacity to implement the provisions of the EMF and the site-specific EMPs:

The PMU established under the Committee for Water Resources (CWR), will have the overall responsibility for the implementation of the EMF provisions and for the development and implementation of the site-specific EAs/EMPs. The PMU will ensure that a dedicated environmental/safeguards specialist is assigned to facilitate and supervise the implementation of such site-specific EMPs. Following the efficient implementation arrangements established under SYNAS-1, the project will set up a PMU and a PIU under CWR, and will make sure that is adequately staffed with needed specialists/consultants, including EMP specialist. The PIU staff at Oblast and Raion level, as well as the respective local governments, will directly coordinate the implementation of the site-specific EAs/EMPs.

3.3 Environmental monitoring program

Checklist of likely parameters to be monitored under the EMPs:

- Quality of ground and surface water in the project areas and downstream;
- Land/soil salinization and pollution ;
- Impact on flora and fauna;
- Solid wastes mainly from construction;
- Soil disturbance and its contamination with lubricants and fuels;
- Soil fertility;
- Concentration of pesticides and heavy metals in organisms and crops.

3.4 Summary of the Framework for EMPs:

Expense item	Type and character of the impact (expected)	Mitigation and monitoring measures	Responsibilities	Cost (USD)
Institutional arrangements				
Site specific environmental impact assessment study	Site specific impacts are not identified and mitigation measures not defined	Development of the project detailed design including the site specific EIAs and EMPs	PMU/ Designer	4, 5 million
Qualified environmental personnel	No qualified environmental personnel, no supervision for the implementation of the EMP	Hiring qualified environmental specialist who will organize environmental training for site personnel	PMU	100,000
		Environmental consultant in the Monitoring and Evaluation consultant's team	PMU	60,000
Mitigation during construction & operation				

Soil protection at construction sites and during river bed straightening	Mixing of soil horizons, soil compaction and failure of natural soil to recover, soil erosion	Cutting and stockpiling of top fertile soil horizons	PIU/ Contractor	215,000 Embedded in works contract
Protection of surface waters	Local turbidity and pollution by technical and domestic wastes, fuel and lubricants Temporary worsening of habitat conditions of water flora and fauna	Prohibition of car and other machinery washing in natural water bodies and rivers The creation of water protection zone not less than 100 m.	PIU/ Contractor	225,000 Embedded in works contract
Protection of biodiversity during construction and transportation activities	Destruction of vegetation and habitats of some animal species at the construction site or transport passage	Managing transport via trip plans, signage and instruction	PIU/ Contractor	Embedded in works contract
Storage of construction materials, fuels and lubricants	Soil contamination	Provide containers for storage of solid wastes and used oil	PIU/ Contractor	Embedded in works contract
Protection of biodiversity during operations	Destruction of vegetation and habitats of some fish and animal species at the old river bed after straightening	Regular targeted water releases into the old river bed. Also introduce (in the subproject civil works) built-in offsets in adjacent project areas.	PIU/ Contractor	220,000 Embedded in works contract
Contingencies	Soil erosion and salinization	Measures to minimize soil cover disturbance and contamination	PIU/ Contractor	Embedded in works contract
	Safety and health	Repair access roads	PIU/ Contractor	Embedded in works contract
	Environmental pollution	Measures on incidental oil and fuel spill clearance	PIU/ Contractor	Embedded in works contract
	Property ownership	Compensation for incidental damage to private entities or other emergency situations	PIU/ (Contractor)	Embedded in works contract
Environmental Monitoring				

Monitor environmental performance of subprojects	Environmental emissions above the maximum permissible levels	➢ Contract with licensed environmental contractor to monitor the following parameters: ➢ Quality of ground and surface water in the project areas and downstream; ➢ Land/soil salinization and pollution ; ➢ Impact on flora and fauna; ➢ Solid wastes mainly from construction; ➢ Soil disturbance and its contamination with lubricants and fuels; ➢ Soil fertility; ➢ Concentration of pesticides and heavy metals in organisms and crops.	PIU/ Construction Supervision Consultant	100,000 Included into supervision costs

Annex A: Environmental Screening Form (filled by the PMU)

PART 1: Description				
SUB-PROJECT SITE				
Scope of sub project and activity – project description				
Involved contractors				
Describe the area topography and vegetation at the site,				
Describe the set-up of the works: no. and type of equipment, no of workers				
Seasonality/ period of construction				
What are the potential environmental impacts of the project?				
PERMITS				
What permits are required for project preparation and / or testing?				
PART 2: SCREENING				
Screening category according to national Regulation on EIA	**EIA required?**	**Yes** ☐	**No** ☐	
	The need for EIA needs to be assessed?	**Yes** ☐	**No** ☐	
	EIA not required?	**Yes** ☐	**No** ☐	
If no annex:	Does project include construction of new structures, buildings	**Yes** ☐	**No** ☐	
	Does project include excavation works?	**Yes** ☐	**No** ☐	
	• The volume of soil being removed			
	Does project include the removal of the topsoil?	**Yes** ☐	**No** ☐	
	• What is the approximate volume?			
	Does the project include the cutting of trees?	**Yes** ☐	**No** ☐	
	• What is the approximate number of trees?			
	• Which types of trees will be cut?			
	Does the project include the change in the river course and/ or cutting existing meanders from water stream	**Yes** ☐	**No** ☐	
	• The length of the meanders cut off			
	Does the project include Activities Generally Ineligible for IBRD financing?	**Yes** ☐	**No** ☐	

PART 3: SCREENING RESULTS				
Screening category according to the project framework	**A**	**B +**	**B -**	**C**
EXPLANATION				

DUE DILIGENCE	
Category A	**Will not be financed by the project**
Category B +	**EIA if MEN or authorized body asks for EIA**
Category B -	
	Material EMP together with the necessary licenses and MSDSs **EMP or EMP checklist**
Category C	
	No due diligence
Final decision on EIA due diligence	
Additional explanation required	
Name and signature of the PMU representative	

Annex B. Minutes of the public consultations

MINUTES

Of the public consultations for preliminary Environmental Assessment and Management Framework and the Land Acquisition Framework of the Kazakhstan SYNAS2

Kyzylorda city **October 14, 2014**

Attedned: 28 people (representatives of rayon akimats, environmental protection and water resources specialists, non-governmental and public organizations' representatives; list of participants is enclosed)

Other attendees of the public consultations:

1. Smailov S, Chief specialist (project manager) of RSE "Kazsushar", Committee for water resources, Ministry of Agriculture of the Republic of Kazakhstan.
2. K.O.Alibayev, Chief specialist of PK «Kazgiprovodhoz Institute".
3. R.Arstanov, S.Sharipova, World Bank's Specialists.
4. E.M.Bekzhanov, Head of the Kyzylorda oblast Division of Natural Resources and Regulation of the Use of Nature

Agenda:

- Preliminary assessment of the Land Acquisition Framework (LAF) of the Kazakhstan Syr Darya Control and Northern Aral Sea Project" (SYNAS-2);
- Preliminary Environmental Assessment and Management Framework (EMF) of the Kazakhstan Syr Darya Control and Northern Aral Sea Project" (SYNAS-2);
- Free microphone (questions, change of opinions).

Head of the Kyzylorda oblast Division of Natural Resources and Regulation of the Use of Nature, E.Bekzhanov has opened and chaired the meeting.

K.Alibayev has acquainted the audience with the Land Acquisition Framework document of SYNAS2 project.

S. Smailov has acquainted the audience with the preliminary Environmental Assessment and Management Framework document of SYNAS2 project.

Regarding the LAF:

During the discussion, the following issues were touched upon: justification for the LAF document preparation; objectives of land allocation; procedures of land allocation and resettlement, comparison of World Bank's safeguards and Kazakhstan legal procedures. Opinions and advice expressed by specialists, representatives of public organizations present at the meeting were heard and discussed.

Alimbetova Z, Zh.Nurymbetov asked the first and second questions in the Table below.

Regarding the EMF:

During the discussion, the following issues were touched upon: justification on the project preparation; the works done during Phase 1 of the project; political, legal and administrative procedures; environmental assessment and Environmental Assessment and Management

Framework for the components of Phase 2 of the project. Opinions, advice and recommendations expressed by specialists, representatives of public organizations present at the meeting were heard and discussed.

Question	Response
Will there be any grant funding available for tree planting?	The project will primarily focus on water resources in the lower Syr Darya river basin. Issues related to tree planting are considered through different international programs dealing with desertification. So, your question is not related to this project.
Who will be constructing the new protection dikes?	Protection dikes will be reconstructed according to the project design and will take into account the levels of excess water releases from the river. The quality of construction works will be supervised by a technical control authority, as well as the by the dike designers themselves. In maintaining and operating of new dikes under the project, a regular monitoring will be conducted by the relevant water resources authorities of the oblasts and rayons.
Did you agree about the projects with other littoral states? Is the project feasible in case there not enough flow/ water volume?	We don't ask permission but we notify other littoral states. The project is implemented in accordance with paragraphs 3 and 4 of the Aral Sea Basin Program which was agreed with all five Central Asian states,
Was there a survey of the soil salinity in the area?	There was a survey of the soil salinity in the project area. According to the survey, salinity is high as a result of the high salinity level in the underground waters
Do you plan to install fish passage culverts at the planned water installations?	This will be defined at the stage of the detailed design.
In principle we acknowledge the possible short term negative impacts on the environment from the project and we realize that overall environmental impact is positive. Similarly we already observe positive impact of the SYNAS 1 project on NAS area. However, we should not forget that there is also a Bigger Aral Sea (BAS). Is it possible to include the monitoring of the BAS into the project?	Taking into account the earlier studies that showed that it is impossible to save the BAS by means of water taken from Syr Daria river, it was agreed to build a protection dam to save the NAS. The project will not monitor the BAS.

Based on the issues discussed, the following agreements were reached:

1. To approve the Land Acquisition Framework (LAF) of the Kazakhstan Syr Darya Control and Northern Aral Sea Project" (SYNAS-2) project presented by PC "Institute Kazgiprovodhoz

2. PC "Institute Kazgiprovodhoz has to submit the mentioned document to the World Bank for its approval and disclosure.

3. To approve results of preliminary Environmental Assessment and Management Framework of the Kazakhstan Syr Darya Control and Northern Aral Sea Project" (SYNAS-2) project proposed by the Committee for Water Resources of the Ministry of Agriculture and PC "Institute Kazgiprovodhoz

4. To take into consideration mentioned comments and proposals regarding preliminary environmental impact assessment of the components included into the project.

Head of Kyzylorda oblast Division of
Natural Resources and Regulation of the Use of Nature **E. Bekzhanov**

LIST OF PARTICIPANTS

№	List of participants	Name
1	Manager of Kyzylorda oblast Department of Natural Resources and Regulation of the Use Nature	Bekzhanov Erkebulan Maratuly
2	Chief specialist (project manager) of RSE "Kazsushar" Committee for water resources Ministry of agriculture Republic of Kazakhstan	Smailov Serikbai
3	Akimat of Kazalinsk rayon	Seitov Erkin
4	Akimat of Karmakshy rayon	Katarbayev Talgat Zhumabekuly
5	Akimat of Aralsk rayon	Tleulesov Bolat
6	Akimat of Zhalagash rayon	Baibolov Bainazar
7	Oblast agriculture management	Nurymbetov Seilbek
8	Oblast land resources management	Dosayev Alimzhan
9	Oblast economy and budget planning	Kasymbekylu Bakytbek
10	Kyzylorda oblast ecology depatment	Kurmanbayev Marat
11	Kyzylorda oblast ecology depatment	Zhainazarov Yertai
12	Lyzylorda oblast consumers rights protection department	Zhubatkanov Mels Amanshauly
13	RSE «Aral-Syradarya interregional basin fish inspection»	Otegenov Yerkin
14	RSE Aral-Syr Darya basin water resources management and protection inspection	Abuov Seitkasym Abuyly
15	NGO «Aral Tenizi»	Aina Baimachanova
16	«Barsa-Kelmes» reservation	Alimbetova Zauresh
17	Aral rayon forest and animal world protection organ	Smagulov Phaizulla Dairabaiuly
18	Kazalinsk rayon forest and animal world protection organ	Nurlan Taiman
19	Zhalagash rayon forest and animal world protection organ	Zhanibek Ganibek Tattibayevich
20	Karmakshy rayon forest and animal world protection organ	Moldayeva Bakytkul
21	World Bank's representatives	Sraripova Svetlana
22	World Bank's representatives	Arstanov Rustem

23	«Kazvodhoz» Kyzylorda branch	Nurymbetov Zhorabek
24	«Kazvodhoz» Kyzylorda branch	Zhakyp Begesh
25	Kazgiprovodhoz Institute	Alibayev K.
26	«Kazvodhoz» South Kazakhstan branch	Bekmuratov R.P.
27	RSE «Zhalagashsushar»	Tabynbayev Askar
28	«Kazvodhoz» Kyzylorda branch	Sagymbayev S.
29	Oblast natural resources and nature use regulation management	Avbakirov Kairat
30	Oblast natural resources and nature use regulation management	Shakirov Kairat
31	Oblast natural resources and nature use regulation management	Ayapova Aigul