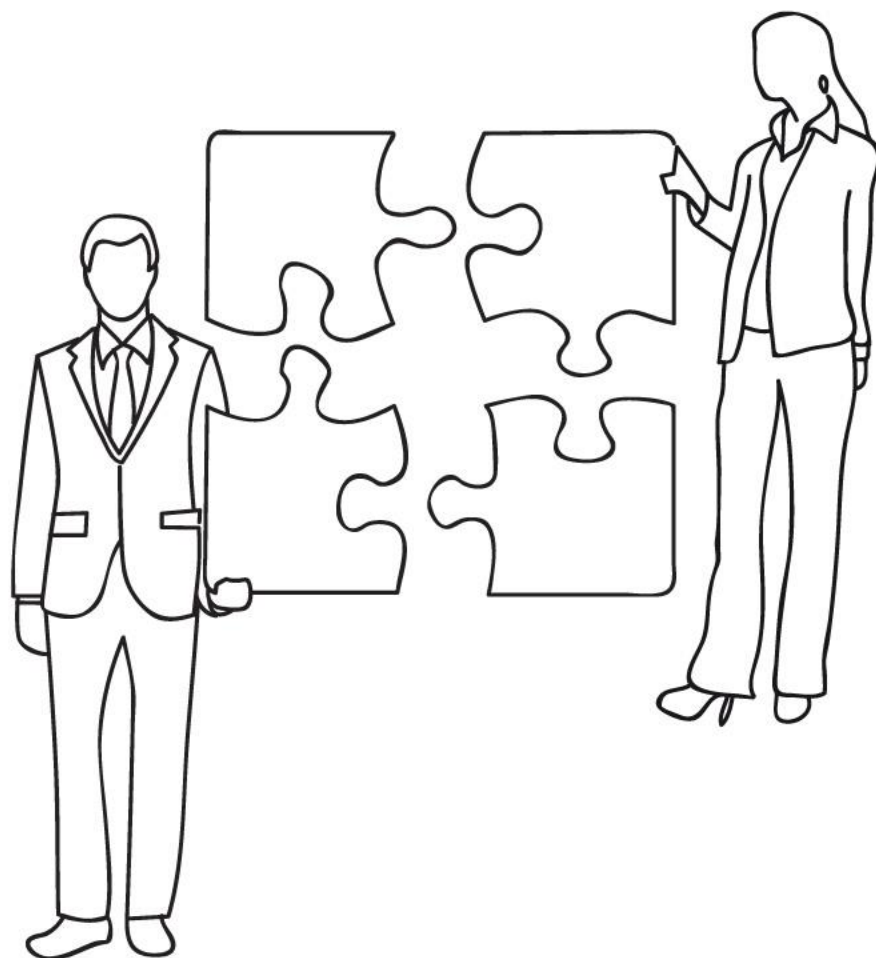


Plan

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REVISION SHEET

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1. Purpose

This document provides an outline of the Strategy towards engaging other developers, local institutions and government, and other stakeholders in designing coherent management strategies to mitigate cumulative impacts, and will inform the contents of the Cumulative Impact Mitigation Plan that will be developed.



2. Applicability

This report describes the strategy to be followed by eni Ghana with regard to mitigating cumulative impacts, applicable during the construction and development drilling phase of the Offshore Cape Three Points (OCTP) Project.

Health	Safety	Environment	Social/ Sustainability
x	x	x	x



3. References

3.1. Internal References

- Ghana OCTP Block Phase 1 Environmental, Social and Health Impact Assessment, ESL, June 2015. Doc. 000415_DV_CD.HSE.0208.000_00, Rev 04.
- Ghana OCTP Block Phase 2 Environmental, Social and Health Impact Assessment, ERM, Doc. 000415_DV_EX.HSE.0304.000_01, Rev 05.

3.2. External References

- Atuabo Free Port. New oil and gas port to open up Ghana to regional offshore market. Retrieved on 4th December from <http://atuabofreeport.com/publications/Article%20-%20Atuabo%20Free%20Port%20to%20open%20up%20Ghana.pdf>
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4. Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AoI	Area of Influence
CDP	Community Development Plan
CIA	Cumulative Impact Assessment
CLO	Communities Liaison Officer
COSPE	Co-operation for the development of emerging countries
DAoI	Direct Area of Influence
ERP	Emergency Response Plan
ESHIA	Environmental, Social and Health Impact Assessment
ESIA	Environmental and Social Impact Assessment
FLO	Fisheries Liaison Officer
FPSO	Floating Production Storage and Offloading
GHG	Greenhouse gases
GNGC	Ghana National Gas Company
GNPC	Ghana National Petroleum Corporation
HIV	Human Immunodeficiency Virus
IFC	International Finance Corporation
HSE	Health, Safety and Environment
LRP	Livelihood Restoration Plan
NGO	Non-governmental Organisation
OCTP	Offshore Cape Three Points
ORF	Onshore Receiving Facility
PS	Performance Standards
RLO	Regional Liaison Officer



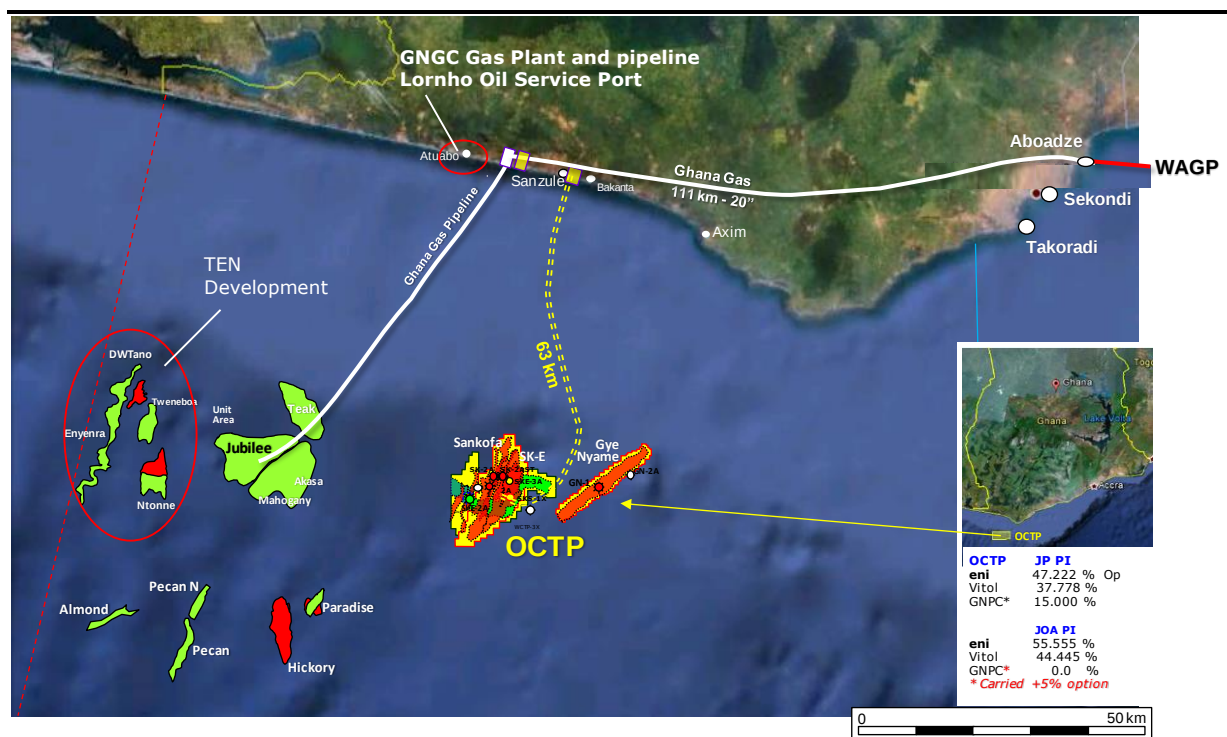
RoW	Right of Way
STI	Sexually Transmitted Infection
TEN	Tweneboa-Enyenra-Ntomme
UN	United Nations



5. Background

The Offshore Cape Three Points (OCTP) Development is a significant oil and gas initiative being led by eni Ghana. The development involves three offshore oil and gas fields - Sankofa Main, Sankofa East and Gye Nyame - all located about 60 km offshore the Western Region.

Figure 5.1 Project Location



Source: Eni, 2014

The Project is being developed offshore and in a coastal region of Western Ghana with a number of other existing development projects ongoing, as well as a number of planned oil and gas related projects which may lead to cumulative impacts. Relevant and significant developments were identified through searches of available documents (i.e. regional planning documents) and consultations with local and state authorities.

A rapid Cumulative Impact Assessment (CIA) was undertaken in July 2015 as part of the OCTP Phase 2 ESHIA following the guidance of the IFC document Good Practice Handbook (GPH) on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets, published in 2013. The cumulative effects of the Project have been evaluated considering the publicly available information of the other projects which are known to be in development or that could reasonably be expected to be developed in the lifetime of the OCTP project in a radius of approximately 10 km onshore and 50 to 85 km offshore. This Cumulative Impacts Mitigation Strategy should be considered as a living document that must be updated as additional information of future developments in the area is available.

Table 5.1 presents a brief description of the identified relevant future developments in the area, their distance to the OCTP project and the spatial and temporal overlap during both construction and operation phases. The proposed location of the future developments within the Offshore Cape Three Points (OCTP) Development are reported in Figure 5.1.



Table 5.1 Known relevant future developments in the area

Project/Plan	Distance from OCTP Project (km)		Description of Project/Plan Components	Estimated date of Construction	Overlap of construction Phase with OCTP project	Overlap of operation Phase with OCTP Project
	Offshore	Onshore				
TEN Development ¹	50	85	Three oil and gas fields in water depths of 1,000 m to 2,000 m. First oil is scheduled for mid-2016 with a facility capacity of around 80,000 barrels of oil per day expected to be reached in early 2017	February 2015 – mid 2016	Yes	Yes
GNGC Gas Plant at Atuabo and Pipeline ²	50	10	Gas plant built to produce 150 million standard cubic feet of gas per day, but expected to produce 70 million standard cubic feet per day and the associated gas pipeline	August 2012-July 2015	No	Yes
Lonrho Oil Service Port at Atuabo ³	50	11	Port located within the Atuabo free port to be used as a hub to service oil rigs in West Africa	Third quarter of 2015 – 2017 (25 months)	Yes	Yes

¹ http://www.tulloil.com/Media/docs/default-source/3_investors/2014-annual-report/tulloil-2014-annual-report-ten-special-feature.pdf?sfvrsn=2

² <http://constructionreviewonline.com/2014/05/atuabo-gas-plant-ghana-completed-july/>; <http://wacee.net/News/Atuabo-Gas-Processing-Plant.aspx>

³ <http://atuabofreeport.com/publications/Article%20-%20Atuabo%20Free%20Port%20to%20open%20up%20Ghana.pdf>

The Jubilee Phase 1 Field Development (in operation since 2014), Phase 1 of the GNG Gas Plant at Atuabo and the road construction project along the GNGC pipeline RoW do contribute to the cumulative impacts in the AoI. However, the Jubilee Phase 1 Field Development has been in operation for a number of years and the construction of the GNG Gas Plant at Atuabo has been completed in July 2015; therefore, those developments already have an effect on the existing environmental and social conditions. These conditions are described in the existing baseline of the OCTP Phase 1-2 EISs and therefore already considered in the impact assessment. Similarly the changes due to the road construction are already noted within the baseline description (particularly with regard to air quality levels).

A summary of the relevant cumulative impacts identified during the construction and operation phase of the Project, as well as their assessment and associated mitigation measures are included in Section 7. For additional details on the assessment of these impacts, reference is made to the Phase 2 EIS document (Doc. 000415_DV_EX.HSE.0304.000_01, Rev 05).



6. Objectives and associated actions of the Strategy

The aim of this document is to develop a strategy towards engaging local institutions and government, other developers and other stakeholders in designing coherent management strategies to mitigate cumulative impacts.

While Eni Ghana is accountable for the design and implementation of mitigation measures commensurate with the magnitude and significance of its contribution to the cumulative impacts, the company will use reasonable endeavors to engage other developers, local institutions and government, and other stakeholders in designing coherent management strategies to mitigate cumulative impacts. Coordination of the relevant operators, agencies and stakeholders under the direction of the Government of Ghana will be essential in order to mitigate and manage potential cumulative effects.

The work will focus on the identification of organisations and processes that eni Ghana could participate in with this aim, and make recommendations as to which are the most appropriate. The strategy will be focused on some of the most relevant cumulative impacts identified in the OCTP Phase 2 ESHIA (assessed of medium or high significance).

Steps will be as follows:

- Provide an overview of the cumulative impacts of medium or high significance identified for the project, as well as their associated mitigation measures (see section 7);
- Identify key organisations at different levels that can be of relevance to help mitigate cumulative impacts of the OCTP Project (see section 8); and
- Make recommendations as to which specific organisations identified in section 8 can be suitable to address the most relevant cumulative impacts identified in section 7 (see section 9).

Actions that will be explored and promoted by eni Ghana, with the support of the partners, will include:

- collaboration with other operators and developers along the coast of the Western Region, and the relevant Government agencies on the identification of common standards and actions for the management of potential cumulative impacts, with focus on land based and fisheries based livelihoods, surface and ground water systems, wetland conservation and biodiversity values, coastal process and marine biodiversity, price inflation, socio-cultural changes, social infrastructure, public services and community health, safety and security;
- collaboration with other oil and gas operators, marine logistic and shipping companies, Ghana Maritime Authority, and Ghana EPA to join and strengthen environmental protection expertise and resources, and to coordinate approaches for oil spill preparedness and response.



7. Overview of Cumulative Impacts

Cumulative impacts of the projects were assessed in the OCTP Phase 2 EIS following the guidance of the IFC/WB Good Practice Handbook (GPH) on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets, published in 2013. This guideline establishes, amongst others, the engagement of other parties needed for effective collaboration or coordination on the management of cumulative impacts.

Tables 7.1 and 7.2 below provide a summary of the cumulative impact assessment discussed in the Phase 2 EIS report (that take into consideration all phases of the OCTP Project). Cumulative offshore environmental impacts are considered low or not significant, and have therefore not been considered in this strategy. However, considering that endangered and critically endangered species have been identified in the area, cumulative impacts on marine flora and fauna have also been considered. It has to be noted that proposed mitigation measures included in the tables below have been extracted from the OCTP Block Environmental, Social and Health Impact Assessments. Mitigation measures included as part of the Biodiversity Management Plan (BMP) and Biodiversity Action Plans (BAPs) may also include a participatory approach. This Strategy should be considered as a live document and will be updated as needed during project lifetime.

The mitigation measures that require a collaborative approach with other parties are highlighted in bold in the tables below. The identification of stakeholders will be updated in detail as part of the development of the Cumulative Impacts Mitigation Plan.



Table 7.1 OCTP Project relevant cumulative impacts - construction and development drilling phase

CONSTRUCTION AND DEVELOPMENT DRILLING PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
Cumulative impacts on the bio-physical environment			
Cumulative Impact on the Surface Water system (Onshore)	Cumulative impacts on surface water are related to the additive effects of changes to the surface water flow and unplanned events (such as spills) in the area which could affect the greater Amansuri River system. This River system is regarded as sensitive as it provides habitat for numerous migratory avian species and contains a designated Important Bird Area.	The following mitigation measures are considered: <u>Degradation of Surface Water Quality due to Increased Sediment Load (from Increased Erosion and Dust)</u> - Monitor the quality of runoff in watercourses on a regular basis depending on flow and corrective actions taken as appropriate. - Monitor the turbidity and suspended solids on an ongoing basis as part of a surface water monitoring programme, to ensure that levels do not increase or decrease by more than 10 to 15 percent of recorded baseline levels. <u>Degradation of Surface Water Quality due to Accidental Spillages of the Fuels and Chemicals</u> - An Emergency Response and/or spill contingency plan will be in place for any accidental spillage. <u>Potential Impacts on Migratory Avian Species in IBA due to Degradation of Surface Water.</u> - Additional measures included in the Avifauna BAP developed as a result of the biodiversity impact assessment and mitigation strategy	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		developed in accordance with Performance Standard 6 will be included in the Cumulative Impact Mitigation Plan. All potential biodiversity impacts in the IBA will be analysed and coordination with all operators and stakeholders will be essential in order to mitigate and manage potential cumulative effects on migratory avian species.	
Cumulative Impact on the Groundwater (Onshore)	Cumulative impacts on groundwater are related to water requirements (i.e. for routine uses) by other developments and to seawater intrusion effects from the construction of the Lonrho port, and unplanned spills and improper waste management in the area which could affect the greater shallow aquifer.	The following mitigation measures are considered: <u>Reduction in Groundwater Resources due to Water Consumption</u> - Within the water management plan, objectives for the groundwater withdrawal will be established by the Project. Where publically available, water demands of other developers in the proximity of the Project should be analysed to verify the presence of any cumulative impact. <u>Surface Sealing and Infilling Leading to Lowering of Groundwater Levels and Drawdown</u> - Recommendation is to monitor groundwater levels in the vicinity of the concession area on a regular basis throughout the construction phase. Where in place and publically available, monitoring of groundwater levels performed by the other developers in the proximity of the Project should be analysed to verify the	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		presence of any cumulative impact. <u>Degradation of Groundwater Quality Due to Spillages of Fuels and Chemicals (Unplanned Event)</u> An Emergency Response and/or Spill Contingency Plan will be in place for any accidental spillage.	
Cumulative Impact on Terrestrial flora (Onshore)	Cumulative impacts on terrestrial flora are related to the conversion of the land from modified and natural/semi-natural to industrial use. This will further reduce habitat and contribute to more habitat fragmentation. Construction phase of the several projects assessed for the CIA⁴ has the potential to facilitate alien / pioneer species intrusion in the ecosystem and expose to risk of loss valuable species and habitats. The cumulative impacts on terrestrial flora has been assessed as Not significant during operation phase since the described risk is not related to this phase.	The following mitigation measures are considered: <u>Loss of Natural Vegetation and Loss of Habitat/Habitat Fragmentation</u> - Set up a monitoring plan to avoid the loss of vegetation (specially species of importance e.g. endemic species) at the planned work sites. - Perform a floral pre-construction surveys during the flowering season. <u>Introduction of Alien Species</u> - Set up a monitoring plan for most rigorous invasive species, to record their populations in the AoI. These results can then be used to define an Alien Species Eradication plan aimed at removing new populations and preventing	Medium

⁴ This refers to the rapid CIA performed for the OCTP Phase 2 ESHIA.



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		them from spreading throughout the AoI. - Prompt revegetation on bare soil with natural or semi-natural vegetation to reduce the spread of alien species. <u>Blackwater Swamp Forest</u> - The Blackwater Swamp Forest will not be impacted by the Project, and the Net Gain requirement will not apply to this habitat, although the NNL requirement will apply considering the features of the wetland habitat found within the eni concession	
Cumulative impacts on the Biological environment			
Marine Fauna and Flora	Cumulative impacts on marine fauna and flora are related to: - The increased underwater noise levels and the presence of infrastructures, vessels traffic and human activity along the beaches. - The increased human presence and land take along the beaches (construction of pipelines of TEN and OCTP projects, new Lornho oil service port, ORF facilities construction and operation). This is expected to result in a loss of suitable nesting habitats and especially in a reduction of reproduction success by an increased poaching on the already laid eggs.	This impact will be managed by implementing a biodiversity action plan (BAP) for sea turtles in collaboration with local NGOs. In addition, a Marine mammals and Sea Turtles protection policy and plan and a Marine mammal observation monitoring program and sea turtle monitoring program (detailed in the Sea Turtles BAP - pln ms hse 019 eni Ghana r00, Appendix B) will be implemented in collaboration with local NGOs and local communities. Coordination with the other relevant operators under the direction of the Government of Ghana will be essential in order to mitigate and manage potential cumulative effects. The following mitigation measures are also	Low



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		considered: <u>Potential Disturbance of Marine Fauna due to Increased Underwater Noise Emissions</u> - Development of a Marine Traffic Management Plan. <u>Potential disturbance of Marine Fauna including Seabirds, Cetaceans and Turtles due to Physical presence</u> - Maintain a record of cetaceans observed during the development activities to gain a better understanding of presence in the area. - A Biodiversity Management Plan (BMP) with special attention on marine turtles and other rare, threatened or endangered or marine species reported shall be developed and implemented. - Laying of the pipeline within the nearshore area will be avoided during peak nesting season between October and February if possible. If activities do continue within this period, and as part of the actions derived from the BMP and the BAP, prior to any activities that involve work the Project will conduct a pre-work inspection of the area to determine whether there are turtles nesting. If sea turtle nesting activity is discovered in the work area, the	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		Project will consult with an ecology specialist to determine the appropriate course of action. Action may include: relocation of the turtle nest to a safe area, communicate and educate communities on threats to sea turtles (poaching, sand mining etc) importance and benefits of conservation and illegal activities (see Sea Turtles BAP).	
Cumulative impacts on the Socio-economic, Cultural and Community Health environment			
Cumulative Impact on price inflation (Onshore)	Cumulative impacts related to the increase in population and worker presence from other developments which could increase the demand for goods and services. This has positive economic benefits for secondary business development, but this may in turn exacerbate price increases for accommodation, food and other retail goods within the surrounding area which can negatively affect the ability of vulnerable persons within the communities to access and afford these goods and services.	General mitigation for impacts on livelihoods and ecosystem services include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. The Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of these impacts. Specific mitigation measures to minimise impacts on price inflation will include: ▪ Work with local government to develop a price index for critical goods purchased by the most vulnerable sections of the community and seeking to collaborate	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		with local government and others to find ways of decreasing impacts. ▪ Undertake a demographic survey and rapid appraisal to reflect on the perceived challenges and changes to quality of life. Corporate Social Investment projects (and the Community Investment Strategy) will be focused on addressing changes and impacts on economically vulnerable groups, and on helping existing organisations to assist those vulnerable groups. Coordination with other relevant operators/developers, agencies and stakeholders under the direction of the Government of Ghana will be essential in order to mitigate and manage potential cumulative effects. ▪ Develop an Influx Management Plan. Should it be determined through baseline monitoring, stakeholder engagement / grievances that there is need for immediate action to manage influx, a focused, short term plan must be developed by eni to minimise the negative impacts of rapid in-migration. This would include mitigation measures targeted at identified influx hot-spots, for example to relieve pressure on social infrastructure and services, and manage health risks.	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
Cumulative Impact on fisheries based livelihoods (Offshore and onshore)	Cumulative impacts related to: - The accelerated influx of people to the area which produces an increased pressure on land, natural resources and ecosystem services. Economic migrants entering the area may also want to pursue fishing and farming activities. - The presence of multiple exclusion zones and land take from other projects results in a reduction in the available fishing grounds which result in the <u>temporary and permanent</u> displacement of fishermen and/or reduced catches, with a detrimental effect on livelihoods, wellbeing and food security of fishmongering communities. This concern was noted by fishermen during consultation. - The re-suspension of sediments and increased turbidity in the water, specially in the nearshore, could result in the temporary displacement and avoidance of fish species. - The increased vessel movements have the potential to interact with fishing activity in the vicinity of the onshore bases and therefore near-shore artisanal fishing activities could be adversely affected through disturbance by these vessels. These increased vessel movements will also result in an increased potential for interactions and possibly collisions with artisanal and commercial fishing	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of this impact. Specific mitigation measures to minimise impacts on fisheries based livelihoods will include: - Where appropriate, supporting measures described in the Fisheries Management Plan, Participatory Monitoring Program and Compensation Framework will also be considered. - Eni will develop and implement a detailed Fisheries Management Plan. If practicable, consultation with other developers could be implemented for a standardization of the compensation framework. Eni will consult local fishermen on the possibility of implementing a participatory monitoring plan. eni will employ a Fisheries Liaison Officer	High



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
	vessels in the local offshore environment. ▪ The damage or loss of passive fishing gear not attached to a fishing vessel if they enter the exclusion zone, causing a livelihood loss through the cost incurred for the replacement of gear. ▪ The presence of lighting that may attract fish around the Project vessels, meaning fish remain in the exclusion zone where no fishing is allowed. This could have the effect of reducing the fish catch. ▪ The interactions with project security force that may cause conflict with local fishermen. A MoU (Memorandum of understanding) between eni ghana and the Navy is under discussion. The MoU will include the appropriate clauses on the use of force in line with international standards).	(FLO) to liaise between fishermen and eni and to provide information to fishing communities, regarding eni's activities during construction. ▪ Interaction with fishermen and other users will be monitored through the CLO/FLO and the Project's grievance procedure. In particular, compensation for any proven damage to fishing gear due to the fault of the project will be dealt through this procedure, with costs being agreed through the consultation with the local fisheries officers or similar. Coordination with other developers in the area in order to agree on a similar approach to compensation will be actively sought and undertaken to the extent possible. ▪ As a complementary measure, a dedicated community investment program will be developed to provide a framework for additionalities to enhance community welfare in the most strategic manner, build strong relationships and achieve a robust social license to operate. The community investment program will be structured around benefit sharing focused on the communities of Nzema East Traditional Authority	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		- A vessel transit route will be agreed with the Ghana Maritime Authority and communicated to fishermen and other marine users through the CLO/FLO. Project vessels will keep within the agreed routes. - The exclusion zone will be monitored with the assistance of the agencies of the Government of Ghana, for the safety of the facility and other users of the area (e.g. fishermen) when potentially close to Project infrastructure or vessels. - Measures will be implemented to ensure that those engaged in maintaining the exclusion zones have received adequate training on the correct code of conduct and rules of engagement which will be based on the Voluntary Principles of Security and Human Rights. - Given that local fishermen and community members have complained of abuse by offshore security patrol, eni and its contractors and subcontractors will be particularly attentive to ensuring that their security arrangements respect human rights, with constructive outreach to police and the navy through consultation, as well as training on human rights.	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		- eni will propose to create a technical/management committee involving eni as well as national and local government, and invite other operators in the area, in order to assess the potential cumulative impacts of the developments on fisheries, and, if possible, to agree on mitigation measures, such as collective adherence to Voluntary Principles. - A Marine Traffic Transportation Plan will be developed for the Project to ensure appropriate protocol is followed during offshore vessel movements. This Plan will consider vessel movements associated with other oil and gas projects in the area, and artisanal and commercial shipping traffic in the local offshore environment.	
Cumulative Impact on farming (Onshore)	Cumulative impacts related to additive land take requirements which could lead a change in land use and to a significant loss of agricultural land and associated economic displacement and loss of livelihoods. Farmers are particularly vulnerable to this impact given the lack of suitable replacement land for agriculture.	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan and Fisheries Management Plan will also be focused on the management of this	High



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		impact. Specific mitigation measures to minimise impacts on farming will include: ▪ The identification of all individuals using land or natural resources for their livelihoods, because according to IFC Performance Standard 5, they are considered eligible for compensation and restoration of livelihoods as part of the Project impact mitigation and management programme. Coordination with other developers in the area will be actively sought and undertaken to the extent feasible. ▪ Mitigation for economic displacement of land-based livelihoods will be detailed in a Livelihood Restoration Plan (LRP) and supporting measures described in the Project Community Investment Strategy ▪ The LRP (and later CI Strategy) will focus on three key elements of compensation and livelihood restoration: – Fully characterising the loss of use rights to land and associated livelihoods incurred by all affected households, and implementing measures to provide suitable compensation at replacement cost and improved or at least	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		restored livelihoods; – Providing additional support as appropriate to affected households to diversify their livelihood strategies to develop alternative economic (non-farming) activities to supplement marine fishing and farming incomes and subsistence (e.g. small scale trade, transport, service industry); and – In conjunction with measures in the Project CI Strategy, exploring and developing further investment opportunities to support and enable farmers to improve their farming income. ▪ The LRP will include a stakeholder engagement plan and standalone grievance procedure which will be communicated and managed by the RLO (or Land Acquisition Manager) in consultation with the CLO and GO.	
Cumulative Impact on Land use (Onshore)	Cumulative impacts related to the increased human pressure on natural resources (i.e. wood, fuel) and development of new transportation infrastructures which may lead people accessing previously undisturbed land and therefore an increase of the potential for habitat degradation / land use change.	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities.	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		Mitigation measures within the Livelihoods Restoration Plan and Fisheries Management Plan will also be focused on the management of this impact.	
Cumulative Impact on socio-cultural environment (Onshore)	Cumulative impacts related to the social and cultural change as a result of the increasing number of project workers and job-seekers from outside the area or the country, that move into the area. Multiple simultaneous or consecutive developments could result in the erosion of social-cohesion in impacted communities, through irreversible changes to cultural practices and breakdown of traditional social networks and norms. This may increase the local community's vulnerability and susceptibility to an increase in anti-social behaviours (i.e. drug, violence) and an increase in disposal income within the area.	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of this impact. Specific mitigation measures to minimise impacts on socio-cultural environment will include: ▪ Stakeholder consultation will include collaborative work with community groups to conserve and preserve and or document local cultural artefacts and traditional practices that are of particular value and significance to sections of the communities. ▪ All stakeholder consultation with the communities will be done through the relevant administrative and traditional	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		authorities to ensure that they remain empowered and their roles are respected. For example, where specific participation and empowerment of youth, women or vulnerable groups is planned as part of focused provision of vulnerable support to those groups, care will be taken to explain the value of participatory approaches and to engage through leadership in a way that does not undermine the traditional system and hierarchy of patriarchal authority. Failure to do so can serve to destabilise family or community relationships. ▪ Employment procedures will be undertaken by the CLO in accordance with the Recruitment, Employment and Training Plan and through a local employment office (or similar centralised procedure) and or located in selected administrative centres to discourage in-migration into the nearest villages. ▪ Opportunities for strategic social investment by the Project will be explored as part of the Project Community Investment Strategy including programmes focused in enterprise development and livelihood strategy diversification. Such initiatives can serve to engage more of those economically active individuals in the DAoI who do not benefit	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		directly from Project jobs, empowering them to create alternative economic opportunities within the affected communities which will benefit a wider cross-section of society. ▪ Community Investment Strategy programmes will support women's empowerment and education programmes to promote women's rights and safe sexual practices (including the use of condoms and female condoms), such programmes will specifically target young girls. ▪ Implement mitigation measures for worker accommodation which include the following: – eni will review and monitor the outcomes of community engagement, media coverage and its workforce and community grievance mechanism for additional indications of labour related issues including child and forced labour that may be arising. ▪ eni will develop an Influx Management Plan and measures within the Stakeholder Management Plan including a Grievance Procedure to ensure proper management of aspects related to socio-cultural changes and potential for community tension or social unrest associated with the Project.	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
Cumulative Impact on Social infrastructure and public services (Onshore and offshore)	Cumulative impacts related to the increase in population of the area, and an increase in pressure on already strained or inadequate social infrastructure and demand for services (i.e. health and education, waste, sanitation) from jobseekers who have settled in the vicinity of their project.	Mitigation for the impacts on social infrastructure and public services will include the development of an influx management plan in conjunction with other projects in the area and local government. In addition, the following mitigation measures are considered: <u>Social infrastructure and services</u> ▪ All facilities and infrastructure specifically built for the project could be left in place after a mutual agreement with the authorities. It would then be handed over to local authorities/communities following a dedicated HSE assessment of the risks and potential impacts associated. As part of the handover a MoU would be signed and all responsibilities regarding maintainence will be transferred to receiving entity. A risk assessment will be conducted prior to transferring the facility, including the capacity of the “receiving” entity to operate the facility (covered by the Petroleum Agreement (clause 19.1)). ▪ In coordination with the Recruitment, Employment and Training Plan and Procurement plan, work with government and District Assemblies on regional scale, to manage expectations and detract work-	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		seeking migration to the Project area through the communication of Project labour needs and clear Project policies and procedures for recruitment. - Formalise and centralise local recruitment procedures through the CLO and the local traditional authorities (Chiefs) and publicise procedures in the immediately surrounding communities in order to manage local expectations and deter casual enquiries for employment at the site. - Support government initiatives that address local capacity to meet increased pressure on schools and other services such as municipal waste management, water and sanitation in the area. - Support to strengthen public protective services through briefing and training eni ghana private security personnel to cooperate with local police services in the DAoI through observation during patrols and reporting of misdemeanours or stakeholder interactions which indicate risk of community/social unrest. - Promote the implementation of joint planning approaches with government and other key stakeholders for strategically	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		important housing projects that will accommodate the influx jobseekers. ▪ Regularly engage with local government to alert them to possible influx hotspots, where pressure on infrastructure and services may be becoming critical. <u>Road Infrastructure</u> ▪ Develop and implement a Traffic Management Plan to ensure compliance with procedures and rules. ▪ Engage with local communities and authorities to inform them about plans and procedures. ▪ Implement awareness campaigns recording traffic and road safety in communities along the transport corridor. If possible, the logistic plans of other developers will be taken into account to define a common framework for traffic management. <u>Increased Pressure on Health Care Resources</u> ▪ eni will ensure that a capacity and needs assessment of equipment and personnel of hospitals in the project area is undertaken to determine if facilities have sufficient capacity to deal with health needs of workforce including contractors and subcontractors. Should it be	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		determined that the hospital in Eikwe does not have the capacity to cope with the needs of the Project workforce, eni will develop a plan to support the hospital so that they are able to do so. - eni will develop Emergency Response Plans (ERPs) for the Project taking into account access to health care, major incidences, multiple casualty events and pandemics to avoid draw-down of community health resources in the event of an incident. <u>Marine Traffic and Infrastructure</u> A Marine Traffic Transportation Plan will be developed for the Project to ensure appropriate protocol is followed during offshore vessel movements. This Plan will consider vessel movements associated with other oil and gas projects in the area, and commercial shipping traffic. The Project will engage with the Maritime Authority and provide relevant information to maintain awareness of the Project and commercial fishing activities among relevant stakeholders. Where possible, safety exclusion zones shall be clearly noted and/or monitored, to enable vessels to be aware when they are close to the safety zones, and	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		appropriate pilot vessels, coastguards and maritime support agreed between the Project and Maritime Authorities. eni will develop and implement a Security Management Plan	
Cumulative Impact on Community health, safety and security (onshore and offshore)	Cumulative impacts related to the increase in traffic on local and national roads, air emissions, dust and noise as a result of the Project and other potential developments as well as additional risks of industrial accidents and explosions. These increases put additional pressure on existing infrastructure and pose risks to health and safety of general road users, traders and of pedestrians (school children whose schools are also close to the roads along transport routes). Additionally the rate of transmission of communicable diseases (i.e. HIV/AIDS) and diseases related to the densification of settlement patterns and unhygienic living conditions (eg water-borne diseases) may also increase.	Mitigation for the impacts on community health, safety and security will include the appropriate maintenance of roads by relevant parties (projects and government) and the development of project health and safety plans and support of government and NGO programmes. In addition, the following mitigation measures are considered: <u>Increased Prevalence of Sexually Transmitted Infections including HIV/AIDS and Communicable Diseases</u> - Develop and implement Emergency Response Plans (ERPs) for the Project taking into account access to health care, major incidences, multiple casualty events and pandemics to avoid draw-down of community health resources in the event of an incident. - Develop and implement an Influx Management Plan. Continue to implement a programme of	Medium



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		stakeholder engagement including a grievance mechanism in communities in the DAoI, in compliance with WBG PS1 and PS4. ▪ Disseminate the grievance mechanism within Takoradi in particular close to the Port and any accommodation used by the Project by advertising it in public places, such as health centres, community facilities and places of worship. ▪ Work with relevant health authorities and NGOs to provide awareness training regarding the transmission of communicable diseases and STIs, preventative measures and the importance of seeking appropriate treatment. <u>Malaria</u> ▪ Work with relevant partners in the community health sector (health authorities, NGOs, development agencies, etc.) to implement awareness raising campaigns regarding the transmission of malaria and measures to prevent transmission within communities. <u>Traffic Accidents</u> ▪ Assess local road conditions and be responsible	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		for road maintenance during Project construction to minimise traffic risks associated with roads deteriorated from Project activities. - Develop and implement a Traffic Management Plan to ensure compliance with procedures and rules. If possible, the logistic plans of other developers will be taken into account to define a common framework for traffic management. Engage with local communities and authorities to inform them about plans and procedures. <u>Site Trespass and Accidents</u> Develop and implement an education program for community members, particularly youth, prior to and during construction activity to promote awareness and understanding of personal safety risks associated with the Project construction. Undertake a programme of stakeholder engagement and consultation to educate local communities of the risks of trespassing, the meaning of signs, the dangers of playing on or near equipment or entering fenced areas.	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		<u>Environmental Change</u> - Eni undertake stakeholder engagement with affected communities and other stakeholders on a range of issues including changes to the visual environment, noise, waste management and social concerns including human trafficking. This engagement is planned during ESIA disclosure and prior to the commencement of construction activities. Engagement will also take place during construction and prior to the commencement of operations. The stakeholder engagements activities and requirements are described in detail in the Stakeholder Engagement Plan. - Eni will implement a Grievance Mechanism to address stakeholder concerns related to the Project in a timely manner. <u>Public Security</u> - A security management plan together with a specific patrolling procedure will be developed for both onshore and offshore installations. - Project security systems will comply with Ghana laws and regulations as well as the requirements of the Voluntary Principles for Security and Human Rights. The security system will include, among other things,	



CONSTRUCTION AND DEVELOPMENT DRILLING PHASE

Cumulative Impact	Description	Proposed mitigation measures	Significance
		selection or personnel based on a careful background screening, training with regards to human rights requirements, and monitoring of performance. Given the ongoing complaints by local fishermen and the concerns raised by community members in the area of influence, eni and its contractors and subcontractors will need to be particularly attentive to ensuring that their security arrangements respect human rights, with constructive outreach to police and the navy through consultation, as well as training on human rights.	



Table 7.2 OCTP Project relevant cumulative impacts - operation phase

OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
Cumulative impacts on the bio-physical environment			
Cumulative Impact on GHG Emissions (Onshore)	Cumulative impacts related to the simultaneous operation of all the projects planned during their expected lifetime of at least 20 years, and especially if residual gas associated with oil extraction is burnt.	Mitigation for the impacts on GHG Emissions will include measures to promote residual gas inclusion into the commercial circuit, both within the Project operations and in liaison with other project developers and Government. Regular monitoring and recording as part of a continuous improvement programme specifically for GHG.	High
Cumulative Impact on the Surface Water system (Onshore)	Cumulative impacts on surface water are related to the additive effects of changes to the surface water flow and unplanned spills in the area which could affect the greater Amansuri River system. This River system is regarded as sensitive as it provides habitat for numerous migratory avian species and includes an Important Bird Area within the area.	The following mitigation measures are considered: <u>Degradation of Surface Water Quality due to Accidental Spillages of the Fuels and Chemicals used</u> - Oil spill prevention and response plans will be put in place. - An Emergency Response and/or spill contingency plan will be in place for any accidental spillage.	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
		Collaboration with wider stakeholder group could be put in place for the management of any accidental spillages.	
Cumulative Impact on Groundwater (Onshore)	Cumulative impacts on groundwater are related to water requirements (i.e. for routine uses) by the other developments and to seawater intrusion effects from the construction of the Lonrho port, and unplanned spills and improper waste management in the area which could affect the greater shallow aquifer.	The following mitigation measures are considered: <u>Reduction in Groundwater Resources due to Water Consumption</u> - All wells installed for water supply will be installed at sufficient depths to access the deep freshwater aquifer to avoid impacts on groundwater resources used by local communities, also in relation to the potential cumulative impacts arising from all developers water requirements. <u>Degradation of Groundwater Quality Due to Spillages of Fuels and Chemicals (Unplanned Event)</u> - An Emergency Response and/or spill contingency plan will be in place for any accidental spillage. Spill containment and clean-up kits will be available on-site, and clean-up from any spill must be in place and executed at the time of a spillage, with appropriate disposal as necessary.	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
Cumulative impacts on the Biological environment			
Marine Fauna and Flora	Cumulative impacts on marine fauna and flora are related to: ▪ The increased underwater noise levels and the presence of infrastructures, vessels traffic and human activity along the beaches. ▪ The increase in human presence and land take along the beaches (construction of pipelines of TEN and OCTP projects, new Lornho oil service port, ORF facilities construction and operation). This is expected to result in a loss of suitable nesting habitats and especially in a reduction of reproduction success by an increased poaching on the already laid eggs, due to the increased human presence along the coast.	This impact will be managed by implementing a biodiversity action plan (BAP) in collaboration with local entities. In addition, a Marine mammals and Sea Turtles protection policy and plan and a Marine mammal observation monitoring program and sea turtle monitoring program (detailed in the Sea Turtles BAP - pln ms hse 019 eni Ghana r00, Appendix B) will be implemented in collaboration with local NGOs and local communities. Coordination with the other relevant operators/developers will be essential in order to mitigate and manage potential cumulative effects on marina fauna. The following mitigation measures are also considered: <u>Potential Disturbance of Marine Fauna due to Increased Underwater Noise Emissions</u> ▪ Development of a Marine Traffic Management Plan. <u>Potential disturbance of Marine Fauna including Seabirds, Cetaceans and Turtles due to Physical</u>	Low



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
		<u>presence</u> ▪ Maintain a record of cetaceans observed during the development activities to gain a better understanding of presence in the area. ▪ A Biodiversity Management Plan (BMP) with special attention on marine turtles will be developed and implemented.	
Cumulative impacts on the Socio-economic, Cultural and Community Health environment			
Cumulative Impact on price inflation (Onshore)	Cumulative impacts related to the increase in population and worker presence from other developments which could increase the demand for goods and services. This has positive economic benefits for secondary business development, but this may in turn exacerbate price increases for accommodation, food and other retail goods within the surrounding area which can negatively affect the ability of vulnerable persons within the communities to access and afford these goods and services. In response to this, however, there may be an increase in secondary businesses exploiting new local markets by bringing in larger quantities of goods at lower prices.	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of this impact. Specific mitigation measures to minimise impacts on price inflation during the constructed phase are also applicable during the operation phase,	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
		including the development and implementation of a Stakeholder Engagement Plan and an Influx Management Plan.	
Cumulative Impact on fisheries based livelihoods (Onshore and offshore)	Cumulative impacts related to: ▪ The accelerated influx of people to the area which produces an increased pressure on land, natural resources and ecosystem services. Economic migrants entering the area may also want to pursue fishing and farming activities. ▪ The presence of multiple exclusion zones and land take from other projects. There are multiple exclusion zones within a certain fishing area, these restrictions could result in reduced catches. This concern was noted by fishermen during consultation. ▪ The interactions with project security force that may cause conflict with local fishermen. ▪ The increased vessel movement create the potential for interactions, collisions and or disturbance of near shore fishing boats and activities. ▪ The damage or lose passive fishing gear not attached to a fishing vessel if they enter the exclusion zone, causing a livelihood loss through	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of this impact. Specific mitigation measures to minimise impacts on fisheries based livelihoods during the construction phase are also applicable during the operation phase. In addition, the following mitigation measures are considered: ▪ eni will notify mariners of the presence of vessels and other marine operations and the exclusion areas will be marked on nautical charts as cautionary advice to all	High



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
	the cost incurred for the replacement of gear. The presence of lighting that may attract fish around the Project vessels, meaning fish remain in the exclusion zone where no fishing is allowed. This could have the effect of reducing the fish catch.	sea-users. A collaboration approach will be put in place with other developers with regards to the analysis of the effect of fishing area arising from the presence of multiple exclusion zones. - The gas export pipeline will be clearly marked on navigation charts. eni will provide a dedicated patrol vessel to monitor and patrol offshore FPSO buffer zone with support if required from Ghana Navy (in this case, they will remain unarmed). The security management plan and patrolling procedure will continue to be implemented both onshore and offshore. These measures will minimize the potential for aggressive interactions between fishing boats and Ghana Navy throughout the operation phase.	
Cumulative Impact on farming (Onshore)	Cumulative impacts related to additive land take requirements which could lead a change in land use and to a significant loss of agricultural land and associated economic displacement and loss of livelihoods. Farmers are particularly vulnerable to this	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource	High



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
	impact given the lack of suitable replacement land for agriculture.	management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan and Fisheries Management Plan will also be focused on the management of this impact. Specific mitigation measures to minimise impacts on farming during the construction phase are also applicable during the operation phase.	
Cumulative Impact on Land use (Onshore)	Cumulative impacts related to the increased human pressure on natural resources (i.e. wood, fuel) and development of new transportation infrastructures which may lead people accessing previously undisturbed land and therefore an increase of the potential for habitat degradation / land use change.	Mitigation for the impacts on livelihoods and ecosystem services will include working with local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan and Fisheries Management Plan will also be focused on the management of this impact.	Medium
Cumulative Impact on socio-cultural environment	Cumulative impacts related to the substantial social and cultural change as a result of the increasing	Mitigation for the impacts on livelihoods and ecosystem services will include working with	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
(Onshore)	number of project workers and job-seekers from outside the area or the country, that move into the area. Multiple simultaneous or consecutive developments could result in the erosion of social-cohesion in impacted communities, through irreversible changes to cultural practices and breakdown of traditional social networks and norms. This can increase the local community's vulnerability and susceptibility to an increase in anti-social behaviours (i.e. drug, violence) and an increase in disposal income within the area.	local and regional governments to develop effective measures and procedures to encourage sustainable resource management, spatial planning and land development as well as efficient land administration by relevant authorities. Mitigation measures within the Livelihoods Restoration Plan, Fisheries Management Plan and Influx Management Plan will also be focused on the management of this impact. In addition, coordination of the influx management with other developers in the area will be actively sought and undertaken to the extent feasible. Specific mitigation measures to minimise impacts on socio-cultural environment during the constructed phase are also applicable during the operation phase.	
Cumulative Impact on Social infrastructure and public services (Onshore and offshore)	Cumulative impacts related to the increase in population of the area, and an increase in pressure on already strained or inadequate social infrastructure and demand for services (i.e. health and education, waste, sanitation) from jobseekers who have settled in the vicinity of their project.	Mitigation for the impacts on social infrastructure and public services will include the development of an influx management plan in conjunction with other projects in the area and local government. Specific mitigation measures to minimise impacts on social infrastructure and public services during	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
		the construction phase are also applicable during the operation phase.	
Cumulative Impact on Community health, safety and security (Onshore and offshore)	Cumulative impacts related to the increase in traffic on local and national roads, air emissions, dust and noise as a result of the Project and other potential developments as well as additional risks of industrial accidents and explosions. These increases put additional pressure on existing infrastructure and pose risks to health and safety of general road users, traders and of pedestrians (school children whose schools are also close to the roads along transport routes). Additionally the rate of transmission of communicable diseases (i.e. HIV/AIDS) and diseases related to the densification of settlement patterns and unhygienic living conditions (eg water-borne diseases) may also increase.	Mitigation for the impacts on community health, safety and security will include the appropriate maintenance of roads by relevant parties (projects and government) and the development of project health and safety plans and support of government and NGO programmes. Eni will undertake stakeholder engagement with affected communities and other stakeholders on a range of issues including, noise and emissions, safety of facilities and pipeline, use of security forces and community-workforce interaction. Engagement will take place prior to the commencement of operations. The stakeholder engagements activities and requirements are described in detail in the Stakeholder Engagement Plan. Mitigation measures considered for construction are also applicable during the operation phase. In addition the following specific measures will be	Medium



OPERATION PHASE			
Cumulative Impact	Description	Proposed mitigation measures	Significance
		implemented: - eni will undertake stakeholder engagement regarding the operation of the FPSO, the ORF and associated facilities, and the pipeline. This will be undertaken prior to the commencement of the operation phase. - eni will maintain the grievance mechanism throughout the operation of the Project so stakeholders can report specific concerns. - eni will undertake a community education programme on pipeline safety to alleviate concerns. - eni will have the ORF and FPSO permanently guarded, while the pipeline routes will be regularly patrolled to deter deliberate damage or vandalism and assure the operational safety of the Project is not compromised.	



8. Identification of key stakeholders

The implementation of most of the mitigation measures associated to the cumulative impacts presented in Section 7 require the participation of different project stakeholders.

These stakeholders have been grouped in the following main categories:

- Other developers in the area, as described in Section 5 of this Strategy;
- National, regional and local institutions, government and authorities;
- Non-governmental organizations (NGOs);
- Other stakeholders, including communities within the project's area of influence and with particular focus on most vulnerable groups.

It should be noted that eni Ghana is engaging with affected communities, stakeholders and interest groups on a regular basis and is guided by the project's Stakeholder Engagement Plan. Engagement related to the management of cumulative impacts will be considered as part of this continuous engagement.

8.1. Institutions, government and authorities

This category of stakeholders includes a number of the regulatory authorities and other ministries of government authorities with direct authority over aspects of the Project activities. Those considered most appropriate to participate in the management of the project's cumulative impacts are listed below.

- **Oil and gas related authorities:** The Ministry of Petroleum, Petroleum Commission and Ghana National Petroleum Corporation for the oil industry, the Ghana Gas Company for the gas industry and Energy Commission;
- **District, Municipal and Metropolitan Assemblies:** District Assembly of Jomoro, Ellembelle, Shama, Nzema East, Sekondi Takoradi Metropolitan Assembly;
- **Regional Administration:** Western Region Regional Health Director, Ellembelle District Health Director;
- **Environmental related authorities:** Ministry of Water Resources, Works and Housing, Environmental Protection Agency and Wildlife Division of Forestry Commission;
- **Infrastructure related authorities:** The Ministry of Roads and Highways, Ghana Maritime Authority, Ghana Ports and Harbours Authority (Accra and Takoradi), and Ghana Navy; and
- **Fisheries related authorities:** Fisheries commission, Directorate of fisheries, National Fisheries Association



8.2. NGOs and other Institutions

The following NGOs that can be found in the coastal districts of Ghana are considered as relevant to participate in the management of cumulative impacts. All of these organizations were engaged during ESHIA scoping meetings performed for the Phase 1 and Phase 2 of the project.

- **Conservation Foundation:** focused on environment, gender equity, water and sanitation, health;
- **Ricerca e Cooperazione:** focused on conservation of biodiversity;
- **Friends of the Nation:** focused on environmental conservation;
- **COSPE** (co-operation for the development of emerging countries): focused in developing of small scale and income generating activities;
- **SNV:** focused on land tenure issues, ownership of resources on land, sustainable management of resources;
- **Ghana Wildlife Society:** focused on Conservation of biodiversity, wildlife, migratory birds;
- **COLANDEF:** focused on land governance, natural resource management, gender, and local governance;
- **Care International:** focused on land tenure issues, ownership of resources on land, sustainable management of resources;
- **World Vision International:** focused on water and sanitation, education, health, child protection;
- **Eagle's Eye Charity Foundation:** focused on basic Education, vocational training, youth and women empowerment, advocacy, health relief, community development, human rights;
- **Friends of Women:** focused on women and girls empowerment;
- **Jomelos Save Life Organisation:** focused on food, education and health services for orphans, long-distance adoption;
- **Mehran Foundation:** focused on health and education,
- **Safe Blood Ghana:** focused on youth health awareness on HIV/AIDS, child support programme through micro-credit loans,
- **Oilwatch Ghana:** online oil & gas project with the mission to publish and archive information on Ghana's oil & gas industry;
- **Coastal Resources Center:** works with governmental and nongovernmental stakeholders alike to understand the issues affecting the coasts of Ghana and help identify solutions;



- **WildSeas** : The Wild Sea's Bahari Karuna project aims at conserving the sea turtles and sharks through community work and involvement. The Bahari Karuna project undertakes a sea turtle conservation program in the Beyin community. Project activities include night beach patrols, education (in schools and communities), sea turtle tourism, law enforcement and hatchery operation.

Eni Foundation and Vitol Foundation are currently developing projects in Ghana and may also be involved in the management of some of the cumulative impacts associated to project activities, such as impacts on health.

Other relevant institutions and frameworks:

- In order to facilitate discussions at a community level, the **Western Region Coastal Foundation** could be engaged. It is focused on helping to build local supply chains, improve stability, and promote inclusive economic development for poor communities in the six coastal districts in Ghana tied to the oil and gas sector;
- The **Western Regional Spatial Development Framework** (WRSDF) is a project funded by NORAD under its "Oil for Development Programme Agreement" together with the Government of Ghana. The WRSDF is a spatial plan and platform for the integration of social, economic and environmental policies and plans for the region and was approved on the 12th of November 2012 and launched by the Ministry of Environment, Science, Technology and Innovation on February 5th, 2013. The key focus areas of the WRSDF are settlements, economic development, infrastructure and the environmental protection.
- The **United Nations High Commissioner for Refugees** (UNHCR) lead and co-ordinate international action to protect refugees and resolve refugee problems worldwide. Its primary purpose is to safeguard the rights and well-being of refugees. The UNHCR has an office in Krisan.
- **B-BOVID Limited** is a Ghanaian agro-business company in the western parts of Ghana. It is a new agro-industrial company promoting a new model of social inclusive commercial farming, which combines innovative agricultural practises, ecological farming and social entrepreneurship to deliver high quality organics products, conserve the environment, promote sustainability lifestyle, create jobs and reduce poverty in rural communities. The company's mission is to develop and disseminate environmentally – sound technologies, for high and sustainable food and industrial crops production to enhance food security and poverty reduction. To achieve its goals of promoting sustainable life style, create jobs and reduce poverty in



the rural communities, B-BOVID works through its field partners **TRACTOR** to educate and demonstrate the feasibility of alternative livelihood.

- **Wetland conservation organizations** (e.g., Hen Mpoan NGO, based in Takoradi, and RAMSAR Coordinator for Ghana and Forestry Commission), particularly in the context of the protection of the blackwater swamp forest and Ramsar site designation.

8.3. Other relevant stakeholders

This group of stakeholders comprises community traditional leaders, schools and health centers, as well as local population of the communities, including fishermen, farmers, infrastructure users and community vulnerable groups (i.e. women, elderly and youth) in the area of influence of the project. This includes the following **communities** of the Ellembele District: **Sanzule, Krisan, Eikwe, Bakanta, Atuabo and Asemde-Suazo**.

The area designated for the project site is an important source of food and additional income for fishing households, and due to the seasonal nature of fishing and unpredictability of income, farming is also crucial to maintaining household livelihoods. In addition, the cumulative impact on fisheries based livelihoods and on farming has been assessed to be of high significance. Therefore, **fishermen, farmers and sharecroppers** are the main stakeholders within the community that concerned by the management of the cumulative impacts.

9. **Proposed Approach to Cumulative Impacts Mitigation Strategy Development**

In order to mitigate cumulative impacts, eni Ghana will be required to engage with other developers, governments, and other stakeholders, by acknowledging the cumulative impacts and risks and suggesting coherent management strategies to mitigate them. Participative monitoring of the affected communities and adequate stakeholder engagement on cumulative effects will also be considered.

9.1. Stakeholders to be Involved in the Mitigation of Cumulative Impacts

Table 9.1 below presents the recommended stakeholders to be involved in the implementation of the different mitigation measures associated with the different cumulative impacts identified in Section 7.

Table 9.1 Recommended stakeholders to be involved in mitigating cumulative impacts

Impact	Construction phase	Operation phase
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Impact	Construction phase	Operation phase
Cumulative impacts on the Bio-physical environmental		
Cumulative impact on GHG Emissions	Not applicable	- Other developments in the area - Government (EPA) - Petroleum Commission
Cumulative Impact on the Surface Water system	- Other developments in the area - Relevant authority in charge of surface water management (Ministry of Water Resources) - Relevant authority in charge of Emergency Response procedures - Surface water users - Petroleum Commission - NGOs (e.g., Hen Mpoan, based in Takoradi) and other wetland conservation organizations (e.g., RAMSAR Co-ordinator for Ghana and Forestry Commission, particularly in the context of the protection of the blackwater swamp forest and Ramsar site designation)	- Other developers in the area - Relevant authority in charge of Emergency Response procedures (EPA for oil spills, Petroleum Commission for other emergencies) - Surface water users - Petroleum Commission - NGOs and other wetland conservation organizations
Cumulative Impact on the Groundwater	- Groundwater users (as per the Water Risk Assessment study and Water Management Plan) - Relevant authority in charge of groundwater management (Ministry of Water Resources) - Relevant authority in charge of Emergency Response procedures - Petroleum Commission - RAMSAR Co-ordinator for Ghana and Forestry Commission, particularly in the context of the protection of the blackwater swamp forest and Ramsar site designation)	- Local community - Relevant authority in charge of Emergency Response procedures - Groundwater users - Petroleum Commission
Cumulative Impact on Terrestrial flora	- Relevant authority in charge of flora management (Environmental Protection Agency and Wildlife Division of Forestry Commission) - Petroleum Commission - NGOs and other biodiversity	Not applicable



Impact	Construction phase	Operation phase
	conservation organizations (e.g., RAMSAR Co-ordinator for Ghana and Forestry Commission, particularly in the context of the protection of the blackwater swamp forest and Ramsar site designation)	
Cumulative impacts on the Biological environment		
Marine Fauna and Flora	- Other developments in the area - NGOs (i.e. COSPE, SNV) - Ghana Wildlife Society - Local community - Petroleum Commission	- Other developments in the area - NGOs (i.e. COSPE, SNV) - Ghana Wildlife Society - Local community - Petroleum Commission
Cumulative impacts on the Socio-economic, Cultural and Health environment		
Cumulative Impact on price inflation	- Local and regional governments - Relevant authority in charge of Spatial planning (Ministry of Environment, Ministry of Lands [Land Commission], Western Regional Spatial Development Framework). - Other developments in the area - NGOs (i.e. COSPE, SNV) - Petroleum Commission	- Local and regional governments - Relevant authority in charge of Spatial planning. - Other developments in the area - NGOs (i.e. COSPE,SNV) - Petroleum Commission
Cumulative Impact on fisheries based livelihoods	- Relevant authorities (Ghana Maritime Authority, Ghana Ports and Harbour Authority, Fisheries commission, Directorate of fisheries, National Fisheries Association). - Local fishermen - Marine users - Other developments in the area - Mariners - Ghana Navy - Petroleum Commission	- Relevant authorities (Ghana Maritime Authority, Ghana Ports and Harbour Authority, Fisheries commission, Directorate of fisheries, National Fisheries Association). - Local fishermen - Marine users - Other developments in the area - Mariners - Ghana Navy - Petroleum Commission
Cumulative Impact on farming	- Local and regional governments - Relevant authority in charge of Spatial planning (Ghana Ports	- Local and regional governments - Relevant authority in charge of Spatial planning (Ghana Ports



Impact	Construction phase	Operation phase
	and Harbour Authority). - Individuals using land or natural resources for their livelihoods - Petroleum Commission - Ministry of Food and Agriculture (MOFA) - Other developments in the area	and Harbour Authority). - Individuals using land or natural resources for their livelihoods - Petroleum Commission - Ministry of Food and Agriculture (MOFA) - Other developments in the area
Cumulative Impact on Land use	- Local and regional governments - Relevant authority in charge of Spatial planning (Ministry of Environment, Ministry of Lands [Land Commission], Western Regional Spatial Development Framework). - Petroleum Commission	- Local and regional governments - Relevant authority in charge of Spatial planning (Ministry of Environment, Ministry of Lands [Land Commission], Western Regional Spatial Development Framework). - Petroleum Commission
Cumulative Impact on socio-cultural environment	- Local and regional governments - Relevant authority in charge of Spatial planning (Ministry of Environment, Ministry of Lands [Land Commission], Western Regional Spatial Development Framework). - Local communities - Relevant administrative and traditional authorities - Local employment offices - Youth, women or vulnerable groups - NGOs (i.e. Friends of women, Eagle's Eye Charity Foundation) - Petroleum Commission - Other developments in the area	- Local and regional governments - Relevant authority in charge of Spatial planning (Ministry of Environment, Ministry of Lands [Land Commission], Western Regional Spatial Development Framework). - Local communities - Relevant administrative and traditional authorities - Local employment offices - Youth, women or vulnerable groups - NGOs (i.e. Friends of women, Eagle's Eye Charity Foundation) - Petroleum Commission - Other developments in the area
Cumulative Impact on Social infrastructure and public services	- Other developments in the area - Government (Ministry of Roads and Highways, Ghana Maritime Authority, Ghana Ports and Harbours Authority, and Ghana Navy) - Local Communities - District Assemblies - Local traditional authorities	- Other developments in the area (refer to Table 5.1 and Section 5) - Local government - Local Communities - Government and District Assemblies - Local traditional authorities (Chiefs).



Impact	Construction phase	Operation phase
	(Chiefs). - Local police services - Road users - Hospital - Relevant authority in charge of Emergency Response procedures - Marine users - Maritime Authority - Petroleum Commission	- Local police services - Road users - Hospital - Relevant authority in charge of Emergency Response procedures - Marine users - Maritime Authority - Petroleum Commission
Cumulative Impact on Community health, safety and security	- Other developments in the area - Local government - Relevant authority in charge of Emergency Response procedures - Local communities - Health authorities - NGOs (i.e. Eagle's Eye Charity Foundation, Safe Blood Ghana) - Development agencies - Road users - Fishermen - Petroleum Commission	- Other developments in the area - Local government - Relevant authority in charge of Emergency Response procedures - Local communities - Health authorities - NGOs (i.e. Eagle's Eye Charity Foundation, Safe Blood Ghana) - Development agencies - Road users - Fishermen - Petroleum Commission

9.2. Steps and Timeframe for Strategy Development

The steps and proposed timeframe for the management of the cumulative impacts is detailed in *Table 9.2*.

Table 9.2 Schedule

Steps	Activities	Timeframe
Initial diagnosis of the situation	- Coordination with other project developers in the area (refer to <i>Table 5.1</i> and Section 5); - Engagement with the Petroleum Commission to define coordination mechanism; - Engagement with the Environmental Protection Agency (EPA) with regards to the possibility for a new Strategic Environmental and Social Assessment of coastal and offshore oil and gas developments in the Western Region.	January - November 2016



Steps	Activities	Timeframe
	Note: In early August, EPA (Petroleum Department) called a round table meeting of all Oil & Gas Operators working in Ghana along with all relevant Regulators (e.g. Petroleum Commission, EPA, GNPC, Ghana Maritime Agency etc.), in order to facilitate coordination with all Operators & Regulators and hence facilitate cumulative impact mitigation. ▪ Early engagement with Ghana Wildlife Society on programs for the conservation of the IBA and its biodiversity values with a strong focus on birds and sea turtles, and on the protection of the blackwater swamp forest habitat of the Amansuri wetland IBA; ▪ Engagement with regional and local authorities; ▪ Diagnosis of the existing situation.	
Coordinated action plan design	▪ Development of a coordinated action plan; ▪ Designation of timings, responsible parties and costs.	April – December 2016
Implementation of the action plan	▪ Creation of working groups; ▪ Coordination with other stakeholders (community members, local NGOs, etc.); ▪ Follow-up of the implementation of the action plan.	Continuous during construction and operation

