NATIONAL STRATEGIC PLAN FOR THE PLANNED PHASEOUT OF MERCURY IN ARTISANAL AND SMALL-SCALE GOLD MINING IN THE PHILIPPINES

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Department of Environment and Natural Resources
Environmental Management Bureau

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INTRODUCTION AND BACKGROUND

1. United Nations Environment Programme Process

1. The United Nations Environment Programme (UNEP) Governing Council/Global Ministerial Environmental Forum, at its twenty-fifth meeting in Feb. 2009, recalled the findings of the 2002 global mercury assessment published by the UNEP and the Inter-Organization Programme for the Sound Management of Chemicals that mercury is a chemical of global concern due to its long-range atmospheric transport, its persistence in the environment once anthropogenically introduced, its ability to bioaccumulate in ecosystems and its significant negative effects on human health and the environment.

2. The Governing Council of UNEP, by its decision 24/3 IV on chemicals management, requested the UNEP Executive Director, working in consultation with Governments and other stakeholders, to strengthen the UNEP mercury programme partnerships by taking a number of steps, including enhancing the artisanal and small-scale gold mining partnership.

3. Recognizing the role of various sectors, the Governing Council further requested the Executive Director of UNEP to work with Governments, intergovernmental organizations, stakeholders and the Global Mercury Partnership to continue and enhance, as part of the international action on mercury in several areas, including the conduct of awareness-raising and pilot projects in key countries to reduce mercury use in artisanal and small-scale gold mining (ASGM).

4. In this regard, UNEP initiated regional projects in South-East Asia and South America under the Quick Start Programme of the Strategic Approach to International Chemicals Management in cooperation with a number of interested partners. The projects aim to contribute to existing capacity-building efforts to tackle the challenging issue of mercury use in artisanal and small-scale gold mining.

2. Philippine Process

5. As part of the South-East Asian Quick Start Programme, the Philippines and Cambodia were selected to test the Guidance Document developed by UNEP for the Development of a National Strategic Plan for Artisanal and Small-Scale Gold Mining (National Strategic Plan).

6. A regional inception workshop (Inception Workshop) was conceived to set the impetus for the development of the National Strategic Plans for Philippines and Cambodia which will supplement regional efforts to protect health and the environment from mercury in the sector. The Inception Workshop was successfully held in the Philippines from 19-21 January 2010. (*The Inception Workshop Report is available at:* *http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/Meetings/tabid/4490/language/en-US/Default.aspx*

7. To facilitate the development of the NSP, the Department of Environment and Natural Resources-Environmental Management Bureau (DENR-EMB) designed three consultative workshops to be conducted in three regions that are heavily engaged in

ASGM – Cordillera Administrative Region (CAR); Region 5; and Region 11, for the collection of baseline data covering mercury use in ASGM.

8. The regional consultations were further designed to adopt a combination of the bottom-up/top-down strategic planning approach in drafting the NSP to create an opportunity for sectors at the frontline of the issue to provide firsthand input to the NSP. Further, to provide a platform for including various ASGM stakeholders the regional consultations were opened to varied stakeholders from government agencies, small-scale miners and large-scale mining companies. The first of the regional consultations were held from April 19-May 6, 2010 and ended on March 2011 finalizing the NSP.

9. Building on the momentum gained from the Inception Workshop and to provide a structure for the development of the NSP, Director Juan Miguel Cuna of the DENR-EMB executed Special Order No. -2010 creating a National Steering Committee (NSC) to oversee and advise a national inter-agency technical working group (TWG) tasked in developing a National Strategic Plan on improving practices and working conditions and reducing the environmental impacts of artisanal and small-scale gold mining, and a Secretariat within the EMB to provide administrative and logistical support to the NSC and TWG.

10. The National Strategic Plan for the Planned Phaseout of Mercury in the Artisanal and Small-scale Gold Mining in the Philippines (National Strategic Plan or NSP), which is presented in the succeeding sections, identifies and describes those activities considered achievable by the appropriate government agencies in partnership with all concerned and interested stakeholders within a 10-year time frame. The NSP takes into account existing regulations of the Philippines, past projects on improving the state of ASGM, results of consultations with various stakeholders, recommendations from international institutions, ongoing process of international environmental governance and rural development. The Draft Strategic Plan is composed of a strategic text for short to medium term activities (2011-2015) and Action Table that covers the full period from of activities from 2010-2020.

11. The draft strategic plan was presented to various stakeholders in the same ASGM regions from 20 October to 10 November 2010 to generate feedback and elicit more inputs pertaining to the formulated goals and objectives, implementation strategies and activities. These inputs from the regional consultations were considered in the fine-tuning of the draft plan.

NATIONAL OVERVIEW

I. Artisanal and small-scale gold mining (ASGM)

11. Artisanal and small-scale gold mining (ASGM) is a significant global development issue. An estimated ten million people in more than 70 countries depend on ASGM for income, producing about 12 % of the world's gold supply (Telmer K. and Veiga M., 2008). The number of gold miners is expected to increase as gold mining becomes increasingly lucrative: the price of gold has nearly quadrupled in the past seven years, rising to over US$900/oz in July 2008, from $260/oz in March 2001.

12. The ASGM sector is a vital contributor to the Philippine economy. ASGM occurs in more than 30 provinces in the Philippines and provides a very important source of subsistence to about 200,000 to 300,000 miners and their families. For the last five years, the sector has been producing an average of 30 tonnes or about 80 percent of the country's annual gold supply.

13. About 30 percent of Philippine territory has been identified to have high potential of mineral deposits. Gold is one of the most important. Based on density of deposits per one-square-kilometer land area, the country is ranked third in the world. In 2002, the Mines and Geosciences Bureau (MGB) of the DENR estimated the country's gold reserves at 5,080,785,289 metric tons, based on its consolidation of resource inventory data supplied by mining companies. Gold deposits have been reported in about 40 provinces[1] while ASGM activities accordingly take place in more than 30 provinces.

14. In spite efforts, there is yet no authoritative estimate as to the actual number of people engaged in small-scale gold mining in the Philippines. Studies however suggest that there are about 200,000 to 300,000 small-scale gold miners nationwide, which includes close to 18,000 women and children. ASGM also supports directly and indirectly the livelihood of about two million people mostly in the rural areas.

3. Gold Trading and ASGM

15. Pursuant to Republic Act 7076, the Bangko Sentral ng Pilipinas (BSP) has established gold buying stations. Although gold is purchased in Philippine pesos, the prices are competitive with those prevailing in the world. Gold sold to BSP must however conform to certain conditions set by the bank as to physical form, maximum dimension, weight and minimum assay. BSP's current gold buying stations include the Mint and Refinery Operations Department (MROD) in Quezon City and its offices in the cities of Baguio, Naga, Davao and Zamboanga.

16. Gold produced by small-scale miners which meet the criteria are sold directly at the MROD or at BSP's buying stations which in turn bring them to MROD for refinement and conversion into London gold delivery bars. Some of the gold may also be manufactured into semi-finished material in the form of grains and sheets for re-sale to local jewellers and industrial users. The BSP may enter into a location swap transaction so that bars held in the bullion vault may be mobilized and made readily available for gold-related transactions in the international market[2].

17. Due to the difficulty of small scale gold miners to meet the standards set by the bank, and their distance to the gold buying centers, they sell their gold to independent gold buyers and jewellers at a lower price.

18. In Compostella Valley province for instance, about 60 percent of ASGM production is believed to be diverted into the black market[3]. In Benguet province, it is said that at least 40 percent are traded outside BSP.

19. In determining the price of gold, the miners merely rely on the information supplied by local gold dealers, who monitor the price of gold. In the international market, gold units are mostly reflected in troy ounce. In the Philippines, troy ounce is converted into grams. Price of gold per gram depends on gold grade or "carat". The term "carat" is used to describe the purity of gold and is based on a total of 24 parts, where pure gold is known as 24 carat and those with lower carats have other metal components like copper or silver[4].

4. Mercury Use in ASGM – Environmental and Health Concerns

20. The indiscriminate use of mercury in ASGM contributes to serious long-term environmental and health problems burdened with social, technical and institutional issues, as well as the implementation of regulations.

21. Mercury is one of the most toxic metals known to man. It bio-accumulates in the food chain, and becomes increasingly concentrated at higher levels. Mercury poisoning can lead to skin irritation, fever, headaches, nausea, irritability, fatigue, loss of speech and memory, decline in sensory ability blindness, depression, kidney disease, tremors, brain damage, serious birth defects and death.

22. There are many reasons why mercury use is widespread in ASGM. One of the principal reasons cited by miners is that mercury produces quick money for their family's daily subsistence, after which, they can still bring their mine tailings to cyanide processing plants for further recovery of gold. Another reason mentioned is that mercury is easy to use and is highly effective at capturing gold under field conditions. It is also very accessible and cheap. They can either buy mercury at retail stores or source it out from gold dealers. Apparently, the input cost for mercury is minuscule considering that it costs only P4 to P10 per gram while gold prices can be as high as P1,800 a gram. Other reasons cited are lack of awareness of the risks of mercury use and lack of knowledge of mercury-free alternatives.

23. Mercury release from the ASGM sector in the Philippines is estimated at 70 metric tons per year, making the industry the single largest emitter of mercury pollution in the country[5]. Mercury use in the sector also poses great danger to the life of the miners, their families and communities living in the affected regions. Mercury emitted from the sector also contributes to the mercury contamination of local and global fisheries.

24. Studies on the effects of mercury pollution in selected ASGM sites reveal that drinking waters and river systems have exceeded recommended water quality criteria, marine mollusks and fishes have mercury levels that are more than the allowable limit, while some people that were examined exhibited symptoms of mercury intoxication[6].

25. In 2006, the United Nations reported that miners in the Philippines are found to have mercury levels up to 50 times above World Health Organization limits.

26. The amount of mercury used by miners varies depending on when it is applied during the gold production process. For every gram of gold produced, miners practicing whole ore amalgamation utilize about 10 to 25 grams of mercury while those who practice amalgamation after grinding use about one (1) to three (3) grams.

27. In 2002, small-scale gold mining activities utilizing mercury has been recorded in at least ten provinces namely: Benguet, Camarines Norte, Negros Occidental, Zamboanga del Norte, Zamboanga del Sur, Bukidnon, Agusan del Norte, Agusan del Sur, Surigao del Norte and Davao del Norte[7]. There are also recent accounts of mercury use among the small-scale miners in Abra, Kalinga, Apayao, Oriental Mindoro, Compostella Valley, Isabela, Nueva Vizcaya, Quezon, Romblon, Southern Leyte, and South Cotabato.

28. Several studies have been conducted to probe the problem of mercury pollution due to small-scale gold mining in the Philippines.

29. A national study on ASGM recently released by Ban Toxics, a Manila-based environmental NGO concluded that mercury use in the ASGM is widespread and unless its use from the sector is halted, the health and environmental impacts to the country could be disastrous. The group identified mercury use in ASGM activities in more than 20 provinces in the country[8].

30. In 2008, a report which summarizes more than 30 years of fish mercury research in Davao gulf, showed that mercury lowers children's IQ levels for life. The report also demonstrated that fetuses and babies are particularly harmed by mercury in fish[9].

31. In 2007, a paper presented during a scientific conference in Davao City revealed that mercury-tainted water from Diwalwal mining site which drains into the Agusan River poses a serious threat to the inhabitants. It was also reported that tests made on weekly diets of rice, fish and mussels of people in mining areas revealed the presence of mercury three times over the permissible levels[10].

32. In September 2006, the Department of Health presented in the conference on Chemical Safety for Sustainable Development in Budapest, Hungary the health and environmental risk assessment made among communities near an abandoned mercury mine especially those whose diet includes consumption of marine or aquatic products[11]. The study was carried out in Honda Bay and Palawan Bay and in villages near an abandoned mine that was in operation for more than 20 years. The assessment unveiled the following:

    - Four (4) fish species[12] had exceeded the recommended total mercury and methylmercury levels in fish while two (2) fish species namely *saging* and *kanuping* had exceeded the permissible levels for methylmercury.
    - While total and methylmercury in canned fish, total mercury in rice, ambient air and drinking water were within the recommended levels, additional mercury load from these sources may contribute to the over-all body burden of mercury among residents in the area.
    - Surface water quality at the mining area, Honda Bay and Palawan Bay exceeded total mercury standards at NV>0.002 ng/ml.

- Soil samples in Tagburos village and Honda Bay exceeded the EPA Region 9 Primary Remediation Goal recommended values for total mercury for residential purposes at NV>23 mg/kg.
- Statistically significant results were obtained for infants when comparing the methylmercury levels in hair for both exposed and control sub-groups. Likewise, comparing the initial and final hair methylmercury levels among pregnant women/mothers in the exposed group showed statistically significant ($p<0.05$) results. Comparing the exposed and control sub-groups' mercury hair levels per sub-group showed statistically significant results among the following; (a) initial and final total mercury hair levels among children, (b) initial and final methylmercury hair levels among children, (c) final total mercury hair levels among pregnant women, (d) initial and final total mercury hair levels among mothers, and (e) initial and final methyl hair levels among mothers[13].

33. A 2005 study made by the Davao Regional Office of the Department of Health (DOH) estimated that 13.5 metric tons of toxic mercury flow annually through rivers into the Davao Gulf. Examination of fish samples from Davao Oriental, Davao del Sur and Davao City markets also revealed that they have mercury contents higher than the allowable limit of 0.3 microgram per gram.

34. In 2000, a study was commissioned by the United Nations Industrial Development Organization (UNIDO) to investigate the effects of mercury contamination in regions affected by the mining operations in Diwalwal, Monkayo, Compostella Valley. Results of said study showed that mercury level from the Naboc River, the major river system draining the operations in the gold rush area exceeds all drinking water quality criteria as well as recommended water quality criteria for the protection of aquatic organisms and their uses. The investigation also reported that mercury concentration in bottom and suspended sediment in the rivers exceeds the Toxic Effects Threshold for the Protection of Aquatic Life by factors of up to 55 and 166, respectively. Mercury levels in rice and other food crops were found to be within appropriate safety standards. Nevertheless, if fish or shellfish from either river are used as part of a staple regular diet, weekly intake levels of mercury (or methylmercury) may exceed WHO guidelines, with possible negative consequences on human health.

35. Part of the study commissioned by UNIDO was the examination of the mine workers from Diwalwal and in the impact barangays in the lowland area of Monkayo. The miners were found to exhibit severe symptoms of mercury intoxication such as fatigue, tremor, memory problems, restlessness, loss of weight, metallic taste and sleeping disturbances. People from the lowland area of Monkayo and surrounding *barangays*, on the other hand, complained of headache, vision problems and nausea, other symptoms which could be related to mercury. Of the workers tested, 55 percent of the ball-mill workers and 61 percent of the amalgam smelters were found to have mercury levels above toxicological threshold limits.

36. The finding of the UNIDO study in the Naboc River Basin was later re-confirmed by the assessment carried out by the Department of Environment and Natural Resources in 2009. According to its report on the geological and bio-physical characteristics of the Naboc River Basin, the water quality of the watershed is categorically critical because of its high mercury content[14].

37. In February 2000, Dr. Hirokatsu Akagi of the National Institute for Minamata Disease (NIMD) collected blood specimen samples from 49 residents of Aroroy, Masbate to

determine mercury levels in their bodies. Results of laboratory examination showed that 35 out of 49 or about 71 percent have elevated mercury level which is beyond the normal level of 6.5µg/l.

38. In 1999, the Department of Health, in collaboration with the UP-National Poisons Control and Information Service investigated the extent of mercury exposure among schoolchildren in Apokon, Tagum, Davao del Norte, a community whose staple diet includes fish mostly coming from the nearby village in Pantukan which is actively involved in small-scale mining. The investigation found out high levels of mercury among schoolchildren examined, attributed mostly to their simultaneous exposure to inorganic and methyl mercury[15]. Of the fish species collected and examined, three (grunt, gopher and tuna) were also reported to have exceeded the WHO environmental criteria for mercury concentrations in fresh water fish from non-polluted areas. A related study conducted by DOH among gold miners in Kingking, Pantukan, Compostella Valley also revealed that mercury levels in blood samples taken from miners as well as soil and water samples taken from the river exceeded the existing WHO standards.

39. The assessment conducted by the DENR on the impact of gold mining in Murcielagos Bay in Sibutad, Zamboanga del Norte also found out that the bay exceeded the allowable mercury limit for seawater and that stations nearest in proximity to the mining area tend to acquire higher concentrations in water, sediment, suspended particulates and organisms. Four out of ten marine molluscs examined were also found to have as much as a factor of 5 more than the allowable limit[16].

40. A study on mercury contamination associated with small-scale mining in Benguet also noted that the seven sub-basins of the Upper Ambalanga River and the sub-basins immediately downstream are experiencing secondary mercury contamination from the small-scale gold mining and processing plants. The sub-basins were found to have sediments containing total mercury concentrations higher than the estimated geogenic concentration of 0.060 µg/g. Results of the study also showed that Acupan, Dalicno and Batuang sub-basins are the most contaminated and that the main Ambalanga River downstream from the seven sub-basins is more than ten times as contaminated by mercury based on the geogenic estimate[17].

41. An attempt to quantitatively assess the economic cost of mercury pollution was made by the Philippine Institute for Development Studies in 1999. Site visits and interview with miners were done in Panique, Aroroy in Masbate, Tugos, Paracale in Camarines Norte and Diwalwal, Monkayo in Compostella Valley as study sites. Using the defensive expenditure approach in the economic valuation of mercury, the authors estimated that about PhP933.5M or less than a billion pesos is required annually for the purchase of protective equipment and facility to control the occurrence of future mercury pollution in small-scale mining in the country[18]. The estimate was made on the assumption that there are 250,000 small-scale gold miners in the Philippines, where 215,000 of them are involved in processing.

5. Mercury Trade in the Philippines

42. Because of its unique properties, mercury is used in a wide range of products and processes. The identified sources of mercury include residual mercury from decommissioned chlor-alkali facilities, recycled or recovered mercury from wastes

and mercury products, primary mercury from mercury mines and by-product mercury from other resource extraction operations.[19]

43. Most of the global mercury supply is mined in Algeria, China, Spain, and Kyrgyzstan. Spain, once a leading producer of mercury from its centuries-old Almaden Mine, stopped mining in 2003, and production is from stockpiled material. In the United States, there are mercury mines in Alaska, Arkansas, California, Nevada, and Texas; however, mercury has not been mined as a primary metal commodity since 1992 hence mercury originating from the country comes from leftover stockpiles. The United States is the leading exporter of mercury[20].

44. In the Philippines, mercury mining was also conducted in the province of Palawan from 1955 to 1976 producing 140 tons annually. Since its closure, however, the country's mercury supply relied primarily on import.

45. According to research, most of the mercury flask reaching the miners do not reveal their sources[21], raising suspicion that they may have been shipped into the country illegally, more so that mercury trade for gold mining has accordingly gone underground in the last five to 10 years and is very secretive[22]. The known sources of mercury for gold mining in the Philippines are the United States, European Union, Algeria, Saudi Arabia, Italy and Kyrgyzstan.

46. According to reports, most countries import much greater quantity of mercury than actually needed for legal uses[23]. The excess amount is sold to the miners through the black market. As the liquid metal passes through brokers on its way to a gold mine, it is becomes very difficult to track. A flask of mercury can originate in Spain, go on to popular transit points like Singapore or Vietnam and then get transferred in Indonesia or Philippines. Mercury also enters the country legally usually for dental and other permitted uses.

47. Based on interviews with mercury traders and miners, Manila is the main source of mercury for gold mining while Baguio City, Bacolod City, Davao City, Zamboanga City and Paracale, Camarines Norte are the secondary sources.

48. The exemption of dental amalgamation in the application of the requirements for Chemical Control Order for Mercury No. 38 appears to have resulted in the proliferation of dental clinics that supply mercury for gold mining. Interviews conducted by NGOs with local miners revealed that mercury is sourced out mostly from dental clinics, which aside from supplying the substance, also operate as gold buyers. In some mining areas, mercury is available in retail stores from P4 to P10 per gram[24].

6. Prevailing Issues Concerning ASGM

49. The principal laws governing small-scale gold mining in the Philippines are Presidential Decree 1899 and Republic Act 7076, also known as the People's Small-scale Mining Act. Both laws require artisanal and small-scale miners to secure permits/licenses before commencing operation. Republic Act 7076 mandates the setting up of People's Small-scale Mining Program and the establishment of funds to promote the industry. It also requires the formation of Provincial/City Mining Regulatory Board to regulate small-scale mining activities. Almost all city and provincial mining regulatory boards in the country have been organized; however, it

appears that foremost in the agenda pertains to quarry operations save for the case of PMRBs in some provinces which may be cited for their support for small-scale gold mining.

50. Almost two decades have passed since the enactment of Republic Act 7076 and there is still no officially declared or established People's Small-scale Mining Area, a geographic area devoted for the ASGM sector. Central processing zone for ASGM activities have yet to be established by the concerned local government units, hence, most miners process their ores near or within habitation areas, exposing children and women to mercury's toxic threats.

51. Costly and difficult permitting and licensing process. The demanding procedures to gain formal operation have likewise dissuaded small-scale gold miners to apply for permits. A checklist for the application of small-scale mining permit under Presidential Decree 1899 issued by the Provincial Mining Regulatory Board of Benguet, for instance, requires small-scale gold miners to comply, among others, the following requirements:

    - Survey plan with the technical description of the area applied for which must be prepared by a registered geodetic engineer;
    - Barangay and municipal endorsement;
    - Clearance from various government agencies;
    - Environmental Compliance Certificate;
    - Surety bond in the amount of Twenty Thousand Pesos (P20,000.00); and
    - Articles of partnership/incorporation/association and by-laws duly registered with concerned government agencies.[25]

52. Weak enforcement of small-scale mining and other related laws. The seeming culture of tolerance and hands-off policy by both the national and local governments have likewise rendered ineffectual the enforcement of small-scale mining laws. Enforcement of other environmental laws such as those that concern air and water pollution, protected area, wildlife, toxic, hazardous and solid waste which are also commonly violated in most mining sites.

53. While most sectors complain about the non-implementation of the important provisions of extant laws on small-scale mining, others criticize the statute's irresponsive and antiquated provisions, which accordingly discourage them to formalize their operations.

54. Small-scale mining companies undertaking large-scale operations. Under local small-scale mining laws, small-scale mining permittees are allowed to mine up to 20 hectares per permit and extract up to 50,000 dry metric tons of metallic and non-metallic minerals annually. There have been reports, however, that some small-scale mining companies exceed the extraction and area limits.

55. Need for the strengthening of local government units (LGUs) for effective local mining governance. While the enforcement of small-scale mining laws have been devolved to the provincial LGUs by virtue of the Local Government Code, there has been little active participation of most provinces with small-scale gold mining activities, let alone smooth coordination in addressing small-scale mining concerns. Existing laws on artisanal and small-scale gold mining likewise grant limited role to municipal and barangay LGUs in the regulation of ASGM activities within their territorial jurisdictions.

56. Uncontrolled ASGM activities in protected and watershed reservation areas. Small-scale mining activities are also reported to have encroached upon ancestral domains of Indigenous Peoples and in established protected areas as well as watershed reservation areas such as in Mount Guiting-Guiting Natural Park in Sibuyan Island, Romblon, the Bugkalots Ancestral Domain in Nueva Vizcaya, and the Mainit Hotspring Protected Landscape in Maragusan, Compostella Valley to name a few.

PRIORITY GOAL AND OBJECTIVES

I. Problem Statement

57. The ASGM sector is a vital contributor to the Philippine economy however it also contributes to environmental and health problems through continued use of mercury and other toxic chemicals, and is in itself burdened with social, institutional, financial and regulatory issues, among others, which affect principally the workers and also the communities living near or downstream from ASGM operations, coastal communities to local and global fisheries, and other stakeholders.

II. Goal

58. Protect human health and the environment through the introduction of responsible ASGM practices focusing on mercury use reduction and eventual elimination of mercury use and releases in the environment, adoption of cleaner and toxic-free gold production technologies and simultaneously address social, institutional, financial, regulatory reform, among others.

7. Objectives

59. The following objectives further define how best to attain the goal set:

    a. To effectively reduce mercury use in the ASGM sector, based on the quantities determined by the baseline data from the DENR-EMB Mercury Inventory report as updated from other sources, by 25% in 2014, 45% in 2017 and a further 15% by 2021 through the elimination of major inefficient and unsafe practices, such as but not limited to whole ore amalgamation, open-burning of mercury amalgam without using retorts, flame hoods, etc., and by migrating to reduced or mercury-free practices or technologies.;

    b. To develop and implement coherent national policies and regulations that promote the sustainability of ASGM and its allied sectors, as well as environmental and safety measures to protect miners, communities surrounding ASGM sites and other stakeholders within the timeframe of the National Strategic Plan.

    c. To establish by2017, a legal and organized group of ASGM miners with a national constituency and representing the needs of the ASGM sector, especially from areas where small-scale gold mining activities are undertaken, working either as a cooperative, association or a formalized group as determined by the Technical Working Group.

    d. To build and strengthen institutional capacity of PMRBs, LGUs and other ASGM support institutions.

    e. To enhance cooperation and partnership at all levels among miners, public authorities, industry sector, NGOs, Church, Academic Institutions, and other stakeholders.

f. To develop and promote the safe handling and long-term storage of excess mercury coming from the ASGM sector.

IMPLEMENTATION STRATEGY

60. A set of interrelated and mutually supportive strategies are proposed to support the concrete implementation of the identified objectives. These are:

- Engagement with various government agencies, industry, non-governmental organizations, academe and other stakeholders in providing options and activities for achieving the goal and objectives of the National Strategic Plan.

- Reduction goals can be further reduced or adjusted for the period 2017 to 2021, as may be necessary, after due evaluation by the National Steering Committee of data provided by academic institutions, non-governmental organizations or other concerned stakeholders.

- Development of an outreach plan that considers broader environmental and health protection initiatives, and links activities to existing programmes and networks building on past and current experiences;

- Formulation and implementation of fundraising strategies to support the National Strategic Plan;

- Increased collaboration with regional and international institutions and networks to facilitate exchange of information, and assistance in the promotion of successes achieved under the National Strategic Plan;

- Increased awareness and advocacy on the use of local technology/know-how/experience to facilitate technology transfer and support capacity-building for the reduction of mercury use in ASGM;

- Periodic review, monitoring and evaluation of activities in relation to the agreed milestones.

- Linking ASGM interventions with national development processes and their products, such as poverty reduction strategies and Millennium Development Goal-based National Development Plans.

ASGM NATIONAL ACTION PLAN

OBJECTIVE 1: To effectively reduce mercury use in the ASGM sector, based on the quantities determined by the baseline data from the DENR-EMB Mercury Inventory report as updated from other sources, by 25% in 2014, 45% in 2017 and a further 15% by 2021 through the elimination of major inefficient and unsafe practices, such as but not limited to whole ore amalgamation, open-burning of mercury amalgam without using retorts, flame hoods, etc., and by migrating to reduced or mercury-free practices or technologies. The following activities can be undertaken simultaneously to achieve Objective 1:

ACTIVITIES	LEAD AGENCY (LD)/ PARTNERS (PRT)	ACTIVITY COST (US$)				TIMELINE										INDICATORS
		Internal	Exter-nal	In-Kind	Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y 10	
1. Amend DAO 97-38 to ban importation of elemental mercury and certain mercury compounds and phase-out and control mercury containing products into the country.	DENR-EMB (LD)															Priority List of Areas/Region Developed
2. Coordinate with DENR-EMB Regional Offices together with BOC and other appropriate agencies on the implementation of amendments to DAO 97-38 and provide training to the above agencies and stakeholders.	DENR-EMB (LD)															
3. Renew monitoring and control of existing stocks or inventory of elemental mercury, certain mercury compounds, and products currently in the country.	DOH, DENR-EMB (LD)															
4. Develop an ASGM priorities area/region list to focus Hg reduction efforts, considering issues such as, but not limited to: ▪ Extent of Hg use and emissions; ▪ Number of miners and communities; ▪ Existence of organization infrastructure among miners in the region; ▪ Cooperation among miners, LGUs, and other stakeholders; ▪ Security; etc.	NSC/TWG (LD)															
5. Conduct a needs assessment on the technical capacity of reduced-Hg practices with a view to identifying practical difficulties and obstacles to their effective application. NOTE: the needs assessment shall be conducted in the areas/region in the order of priority developed by the NSC above.	LGU, MGB (LD)															Needs Assessment Report Issued

6. Develop pilot project/s to help reduce Hg use and promote reduced-mercury or mercury-free processes and technologies in Priority Region/s looking at addressing the following: whole-ore amalgamation, open-burning, and mercury-use prior to cyanidation practices.	EMB, MGB (LD) SSM, LGU, Civil Society, UNEP, UNIDO (PRT)															Proposals submitted and implemented
7. Undertake research and development (R&D) to further improve existing mineral processing technique particularly in the recovery of mercury and gold in tailings and tailings pond.	LGU, MGB, DTI, DOST (LD)															R&D Formulated
8. Develop alternative mineral extraction process with high gold recovery.	LGU, MGB, DOST (LD)															Processes Formulated
9. Designate mineral processing zones with common engineered tailings pond.	LGU, MGB, PMRB (LD)															Inventory of mineral zone
10. Conduct appropriate mine rehabilitation efforts, such as tree-planting, etc.	SSM, MGB, LGU (LD)															Inventory of projects.
11. Provide technical assistance to small-scale miners on the proper and systematic mining and milling operations, with emphasis on reduced mercury or mercury free processes and technologies.	LGU, MGB, EMB (LD) CASM, UNIDO, UNEP, Civil Society, Church (PRT)															No. of technical workshops conducted based on Field Reports
12. Conduct information and education campaign (IEC) on: ▪ Minimum environmental impact mining, including mercury-free or reduced mercury techniques and processes, and milling operations, especially calling for the elimination of whole-ore amalgamation, open-burning, and mercury-use before cyanidation; ▪ Environmental education and awareness program ▪ Rights of IPs in mining areas within their ancestral domains ▪ Indigenous mining practices and other clean gold production techniques The IEC shall endeavor to utilize existing government technical or vocational training, e.g. TESDA, and civil society initiatives on mercury or the environment, e.g. Hg-Free Schools Programme, Catholic Church's social action commission, etc.	EMB, MGB, LGU, Civil Society, DOH, DepEd (LD) UNIDO, UNEP, CASM, Academe (PRT)															No. of IEC conducted.

13. Conduct regular inspection and monitoring of the following: ▪ Environmental media around or traversing ASGM sites; ▪ Health of miners and their families; ▪ Aquatic organisms consumed by downstream communities from ASGM sites; ▪ Mine safety rules and regulations. ▪ Quality of life of mining communities	MGB/LGU, EMB, DOH (LD)															No. of inspections of mines, health, and enviro., monitoring
14. Identify and provide appropriate supplemental livelihood programs to miners and their families	TLRC, MGB, DSWD, LGU (LD)															No. of support programs.

OBJECTIVE 2: TO DEVELOP AND IMPLEMENT COHERENT NATIONAL POLICIES AND REGULATIONS THAT PROMOTE THE SUSTAINABILITY OF ASGM AND ITS ALLIED SECTORS, AS WELL AS ENVIRONMENTAL AND SAFETY MEASURES TO PROTECT MINERS, COMMUNITIES SURROUNDING ASGM SITES AND OTHER STAKEHOLDERS.

ACTIVITIES	LEAD AGENCY (LD)/ PARTNERS (PRT)	ACTIVITY COST (US$)				TIMELINE										INDICATORS
		Internal	Exter-nal	In-Kind	Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y 10	
1. Conduct a review and assessment of ASGM regulations and policies to determine gaps and overlaps.	LGU, MGB, EMB (LD) Civil Society (PRT)															Analysis Report Issued.
2. Prepare draft legislation or regulation covering the regulatory gaps and synchronizing legislation on ASGM including the development of economic/financial and other relevant instruments/mechanisms.	LGU, MGB, EMB (LD) Civil Society (PRT)															Draft Legislation/ Regulation Prepared
3. Preparation of training manuals/kits on the elaboration of national legislation/policy and enforcement to be used by appropriate government agencies.	LGU, MGB, EMB (LD) Civil Society (PRT))															Manuals Produced

4. Incorporate the issue of ASGM within the national sustainable development plan or agenda.	EMB, LGU, RDC, NEDA (LD)															??
5. Conduct regular briefing with key legislators and government officials on the needs of the ASGM sector; prepare groundwork for legislative or regulatory solutions; initiate legislative or regulatory adjustments.	MGB, EMB (LD) Civil Society (PRT)															Meetings conducted.
6. Collaborate with international institutions to help mainstream the issue of ASGM.	EMB (LD) Civil Society (PRT)															Meeting conducted and activities planned.
7. Congress to file and approve the Amended Small-Scale Mining Act	RDC															Amended Small-Scale Mining Act
8. Promotion of Amended Small-Scale Mining Act	MGB (LD)															Workshops / Consultations

OBJECTIVE 3: To establish by 2017, a legal and organized group of ASGM miners with a national constituency and representing the needs of the ASGM sector, especially from areas where small-scale gold mining activities are undertaken, working either as a cooperative, association or a formalized group as determined by the Technical Working Group.

ACTIVITIES	LEAD AGENCY (LD)/ PARTNERS (PRT)	ACTIVITY COST (US$)				TIMELINE										INDICATORS
		Internal	Ex-ternal	In-Kind	Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	
1. Encourage small- scale mining to form mining cooperatives/organizations/corporations or similar entities.	Office of the President / CDA (LD)															Statement issued by OP/CDA
2. Conduct cooperative/organization training and preparation and use of the business plans for the development of two regional ASGM groups whose goal is to improve mining practices particularly reduction and if feasible phase-out of mercury use in ASGM.	CDA (LD)															Number of trainings conducted
3. Conduct municipal and provincial mining summit according to priority areas/regions following the goal of the regional groupings above.	SSM, LGU, PMRB/CMRB MGB (LD)															Mining summit.
4. Legalize the mining operations of artisanal and small-scale mining located in conflict areas or public lands.	LGU, PMRB (LD)															Increase in number of legal ASGM
5. Educate small-scale miners on mining laws, rules and regulations particularly on the acquisition of mining rights and/or contracts, organization, etc. utilizing miner-to-miner trainings and similar methods.	MGB, PMRB/LGU (LD) SSM (PRT)															Number of trainings conducted
6. Strictly implement policies and regulations on child labor and develop policies upholding the role of women in small-scale mining.	LGU, DSWD, NCFW, DOLE (LD)															Policies issued.
7. Establish structures for social benefits such as day care centers, health clinics, and LGU sub-stations in small-scale mining areas.	DSWD, LGU, SSM (LD)															Number of structures created.
8. Develop programmes - technical outreach, organizational finance, fund-raising, etc. to support the functions of the ASGM groups and their business plans.	DTI, TLRC, GFI, Civil Society (LD)															Number of programmes developed.
9. Develop and publicize financing instruments and fiscal incentives for organized small scale miners are developed and publicized	GFI, DTI (LD)															Number of financing instruments and fiscal

																incentives.

OBJECTIVE 4: To build and strengthen institutional capacity of PMRBs, LGUs and other ASGM support institutions.																
ACTIVITIES	**LEAD AGENCY (LD)/ PARTNERS (PRT)**	**ACTIVITY COST (US$)**				**TIMELINE**										**INDICATORS**
		Internal	**External**	**In-Kind**	**Total**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**	
1. Amend R.A. No. 7076andP.D. No. 1899, to make it more responsive to the needs of artisanal and small- scale miners.	RDC (LD)															Amended law.
2. Operationalization of PMRB/CMRB as per R.A. No. 7076	LGU, MGB															Number of operational PMRB/CMRB.
3. Train LGUs on improvements in law affecting SSM – strengthening of PMRB/CMRB, etc.	MGB, DILG (LD)															Number of trainings.
4. Promptly and efficiently execute mandated functions in processing and regulating the issuances of small- scale mining/commercial permits.	PMRB															Number of permits issued.
5. Simplify the procedures in the issuance of small scale mining permits.	PMRB/LGU															Simplified procedures.
6. Provide arbitration to large-scale and small-scale miners to arrive at an amicable settlement of conflict	LGU, DENR (LD)															Creation of arbitration mechanism.
7. Allocate people's small scale mining areas (PSSMA) and identification of mineralized areas	LGU/PMRB, MGB (LD)															PSSMA allocations.
8. Identify unused areas in mining permit fit for ASGM operations	MGB (LD)															Number of unused areas identified.

OBJECTIVE 5: To enhance cooperation and partnership at all levels among miners, public authorities, industry sector, NGOs, Church, Academic Institutions, and other stakeholders.																	
ACTIVITIES	**LEAD AGENCY (LD)/ PARTNERS (PRT)**	**ACTIVITY COST (US$)**				**TIMELINE**										**INDICATORS**
		Internal	**External**	**In-Kind**	**Total**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**	
1. Identification of key industry/business stakeholders and opportunities for partnership to support the goal of environmentally sound ASGM (eg: corporate foundations, industry, associations, multinational companies, companies operating at the national level)	DTI, GFI, TLRC (LD)															List of stakeholder partners
2. Symposium, meetings, forum discussion organized with key industry sector's partners, environmental and development NGOs, academia and local communities	DTI, GFI (LD)															Number of symposiums held.
3. Establishment of operational network of key stakeholders to support the goal of environmentally sound ASGM at the provincial and national level.	DENR (LD)															Operational network of stakeholders established.
4. Development of multi-stakeholder financial strategies and innovative fund-raising for environmentally sound ASGM activities.	DTI, GFI, LGU, DENR (LD)															Multistakeholder financial strategies list developed.

OBJECTIVE 6: To develop and promote the safe handling and long-term storage of excess mercury coming from the ASGM sector.																
ACTIVITIES	**LEAD AGENCY (LD)/ PARTNERS (PRT)**	**ACTIVITY COST (US$)**				**TIMELINE**										**INDICATORS**
		Internal	**External**	**In-Kind**	**Total**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**	
1. Assess options for managing the excess mercury supply, including safe and secure long-term storage of mercury and mercury containing waste, and disposal of mercury.	DILG, LGU, DOH, EMB, MGB (LD)															Assessment report issued.
2. Assess technologies to sequester excess mercury (amalgamation and stabilization) and facilities for safe long term storage (above ground and below ground storage facilities)	EMB, DOST (LD)															Assessment report issued.
3. Develop Committee / Working Group to manage terminal storage	DENR, LGU															Working

project.	(LD)															Group established.
4. Develop financing options to support terminal storage project	LGU, DENR, GFI (LD)															Financial Feasibility Issued.
5. Develop collection and transport protocol for excess mercury	DENR (LD)															Collection and Transport Report
6. Creation of terminal storage facility/option and acceptance of excess mercury.	DILG, LGU, DOH, DENR (LD)															Facility Created.

CDA - Cooperative Development Authority
CMRB - City Mining Regulatory Board
DAO - Department Administrative Order
DENR - Department of Environment and Natural Resources
DILG - Department of Interior and Local Government
DOH - Department of Health OP - Office of the President
DOLE - Department of Labor and Employment
DOST - Department of Science and Technology
DSWD - Department of Social Welfare and Development
DTI - Department of Trade and Industry
EMB - Environmental Management Bureau
GFI - Government Financial Institution
LGU - Local Government Unit
MGB - Mines and Geoscience Bureau SSM - Small-Scale Mining
TLRC - Technological Livelihood Research Center
PD - Presidential Decree
PMRB - Provincial Mining Regulatory Board
PSSMA - People's Small-Scale Mining Area
PSSMPF - People's Small-Scale Mining Protection Program
RA - Republic Act

INFORMATION, COMMUNICATION, AND EDUCATION

The Information, Education and Communication (IEC) component of the National Strategic Plan provides the overall direction and content of IEC interventions which shall be embodied in an IEC plan that will be developed to support the attainment of the goals and objectives laid down in the NSP. The IEC plan will include, among others, analysis of target audience, formulation of key messages, major strategies and activities as well as budget requirements. It will focus on specific audience segments that will be exposed to a barrage of particular messages, encouraging them to adopt, practice or support the behavior being promoted.

IEC Strategies and Key Activities

To reach out to various stakeholders with diverse interests and to influence or inspire them into action, a combination of any of the following strategies and key activities will be pursued:

- use of visually heavy popularized IEC materials
- audience segmentation that requires developing audience-specific IEC materials that carry specific messages in local languages;
- alliance/coalition building to get support of other sectors of society, e.g., civic organizations, media groups, church groups;
- providing incentives/disincentives;
- use of showcase areas (development of feature stories, press releases)
- encouraging regular media coverage and organizing press briefings in various parts of the country
- use of multi-media, e.g., radio, TV, newspaper, cyber-media, mobile phones combined with interpersonal communications such as orientations, FGDs, community and school visits legislative presentations/briefings, meetings;
- utilizing collateral materials, e.g. executive primers, FAQs, posters, leaflets, flyers, audio-visual presentations, calendars
- organizing special mass participation events
- formation and/or strengthening of local IEC teams
- feeding promotional materials into the network of other agencies with significant multiplier effects (e.g. newsletters, blogs, websites, etc.)
- targeting of influential sectors
- social marketing and vertical and horizontal advocacy
- IEC baseline data gathering and periodic monitoring and evaluation of the effectiveness of IEC activities and strategies

IEC Concepts Document

An Information Education and Communication (IEC) Concepts Document that has been initially developed is structured in a modular format to facilitate the review of the IEC Concepts to determine their effectiveness in addressing and contributing to the accomplishment of the overall goal and objectives of the NSP, and to check where gaps may exist. The format also lends itself better to quick adjustments and revisions in specific sections as may be necessary even during the implementation process of the NSP.

Although the preliminary draft covers a limited period of one year as a start-up phase, the concepts and key messages presented here provide a concrete foundation upon which to build effective communication strategies in succeeding years.

It is widely recognized that communication is an all-important factor that can make or break the success of a product or project, as evidenced by the huge and growing amounts of money poured into advertising, public relations and various forms of IEC activities. To ensure coherence and continuity -- as well as efficiency, maximum impact and effectiveness -- it is best to have a single entity (i.e. Project Communications Head or Officer) dedicated to overseeing the preparation of a finely-detailed communication plan and its eventual implementation.

Overarching Message

The overarching message for IEC as derived from the stated Goal of the National Strategic Plan for ASGM is: *Mercury use and releases to the environment must be reduced and eliminated, to protect human health and the environment from toxic harm and promote the sustainability of ASGM. To this end, related social, institutional, regulatory and other issues and concerns must be addressed.*

From this overarching message emanates a number of key messages that are formulated and positioned specifically to encourage identified stakeholders to practice or perform the desired behavior for the attainment of the plan's specific objectives.

Key Messages and Approaches in Support of Specific Objectives

Objective	Primary Target Audience/s	Desired Behavior	Key Messages	Media/Venue	Timeframe
a. To gradually reduce and eventually eliminate mercury use in the ASGM sector	▪ Miners, family members and mining communities ▪ Concerned government agencies/ authorities (including LGUs)	▪ Miners – to stop using mercury ▪ Family members – to convince the gold miners to use safer alternatives ▪ Mining communities – to put pressure to the miners to use safer and cleaner gold production methods ▪ Concerned government agencies – to educate the miners, their families and mining communities on the ill-effects of mercury	▪ Health risks of mercury use to miners, their families and affected communities ▪ Environmental risks of mercury and how these affect them and the next generation ▪ Presence of cleaner and safer gold production alternatives where miners can earn and save more with less risk ▪ Sanctions/penalties for violation of existing laws and regulations for the protection of health and the environment	▪ Visually-heavy IEC materials in pop ed format (e.g. illustrated primers, komiks, posters) ▪ FGDs, mini-forums for "community messengers" (e.g. Brgy. Health Workers, Brgy. Officials, church and community leaders) ▪ Other venues (health centers, schools, church, brgy. meetings, and places where miners and their families often gather) ▪ Community radio/TV, newspapers and mobile phones	Q1: Production Q2: Dissemination Q1 Q2-Q4 Q2-Q4
b. To develop and implement coherent national	▪ Concerned government agencies/ authorities	▪ Enact laws/ promulgate regulations in support to ASGM	▪ Value of the industry in terms of livelihood, income generation, poverty	▪ Press releases (multimedia, including cyber-media) ▪ RTDs	Q1-Q4 Q2-Q4

Objective	Primary Target Audience/s	Desired Behavior	Key Messages	Media/Venue	Timeframe
policies and regulations…	(including LGU's) ▪ legislative bodies	▪ Implement/enforce relevant laws and regulations ▪ Operationalize PMRBs; designate PSSMAs or minahang bayan and establish ASGM processing zones ▪ Media, church, environmental groups, etc. – to put pressure and help these agencies develop and implement these policies and regulations	alleviation and contribution to rural development ▪ Contribution of organized and adequately supported ASGM industry to community and national security ▪ Proper management of the ASGM sector contributes to improved national and local environmental governance ▪ Benefits to the concerned agencies/LGUs for developing and implementing these policies	▪ Audio-visual materials ▪ Executive primers/FAQ's ▪ Feature stories ▪ Legislative presentations	Q1: Production Q3: Dissemination Q1: Production Q2-Q4: Dissemination Q3: Presentations Q4: Lobbying
c. To establish by 2017, a legal and organized group of ASGM miners… and by 2021, establish a national ASGM federation	▪ Small-scale gold miners ▪ Concerned agencies (e.g. LGUs, MGB, CDA)	▪ To organize themselves into small-scale mining associations/ cooperatives/ federations ▪ Concerned agencies (e.g. LGUs,	▪ Benefits of being organized (personal, community, national) ▪ How to organize a small-scale mining entity/group (corporation,	▪ Same media/venue as Objectives a and b. ▪ Capacity building: leadership training, cooperative training, organizing, etc.	Q1-Q4 Q4: Preparation of training modules and materials

Objective	Primary Target Audience/s	Desired Behavior	Key Messages	Media/Venue	Timeframe
		MGB, CDA) – to provide support to the organization and strengthening of ASGM associations	partnership, cooperative, foundation, non-profit, etc.		
d. To build and strengthen institutional capacity of ASGM support institutions.	▪ PMRBs, LGUs, MGB, other ASGM support institutions	▪ Provide support to ASGM by designating PSSMAs, resolve conflicts in these areas, facilitate formalization of ASGM operations ▪ Meet regularly to discuss ASGM concerns/develop meeting protocols ▪ Allocate funds to support ASGM activities	▪ All of the key messages of Objective b as background information ▪ Understand their legislative mandate ▪ How to implement their legislative mandate. ▪ Benefits to the concerned PMRBs/LGUs for supporting ASGM activities	▪ Comprehensive primers/FAQ's ▪ Audio-visual materials ▪ Training manual ▪ Symposia/workshop handouts	Q1: Production Q2: Dissemination Q1: Production Q3: Dissemination Q2: Production Q4: Dissemination Q1
e. To enhance cooperation and partnership at all levels among	▪ General public	▪ Sustained support and active participation to ASGM activities	▪ Public health and environmental risks related to the use of mercury in ASGM	▪ IEC print materials ▪ Audio-visual	Q1: Production Q2: Distribution Q2: Production

Objective	Primary Target Audience/s	Desired Behavior	Key Messages	Media/Venue	Timeframe
miners, public authorities, industry sector, NGOs, Church, Academic Institutions, and other stakeholders.		▪ Provide feedbacks and inputs to ASGM interventions	practices ▪ ASGM contribution to Philippine economy ▪ Problems and challenges ▪ The imperative and benefits of working together to address all major issues and concerns	presentations ▪ Press releases (multimedia, including cyber-media) ▪ Leaflets/flyers ▪ RTD's, forums/ conferences	Q4: Dissemination Q1-Q4 Q1 Q1-Q4
f. To develop and promote the safe handling and long-term storage of excess mercury coming from the ASGM sector.	▪ Miners ▪ National and Local Government	▪ Miners – To surrender mercury to concerned agencies for safe storage ▪ National and Local Governments – To convince miners to surrender mercury ▪ Develop and publish protocols for safe handling and storage of mercury ▪ Establish terminal storage facility for confiscated mercury	▪ Environmental, Health, and Security risks of improper storage and handling ▪ Protocols for safe handling and storage	▪ Visually-heavy IEC materials in pop ed format (e.g. illustrated primers, komiks, posters) ▪ FGDs, mini-forums for community "messengers" (e.g. Brgy. Health Workers, Brgy. Officials, church and community leaders) ▪ Other venues (health centers, schools, church, brgy. meetings, and places where miners and their families often gather) ▪ Community radio, newspapers and mobile phones	Q2: Production Q3: Dissemination Q1 Q1 Q3-Q4

EVALUATION MECHANISM

Evaluation forms an integral element of the National Strategic Plan because it provides the means by which the progress and overall success of plan implementation will be tracked and measured. It also creates a mechanism for ensuring accountability and transparency in the use and allocation of resources and in strengthening partnerships between and among ASGM stakeholders. Towards this end, an evaluation framework that integrates criteria and indicators, outcomes, process and impacts as well as mechanisms by which the evaluation system will be carried out will be developed. One such mechanism will be the conduct of periodic evaluation both at the regional and national level to determine the degree of success in achieving the objectives of the plan, collect and build strategic information on implementation needs, results achieved, processes and effectiveness, among others, which can be used by decision–makers as basis for future planning, revision or re-framing of objectives and strategies to help further improve the program's level of success.

Evaluation will be carried out in a manner that is consistent with the principles of (1) impartiality, (2) timeliness, (3) transparency, (4) competency and (5) ethics[26]. Impartiality will be reflected, among others, by the use of valid measurement and analysis and appropriate criteria, indicators and benchmarks agreed upon beforehand by key stakeholders. Timeliness suggests that evaluations will be designed and completed in a timely fashion to achieve the purpose for which they were conceived and to ensure well-timed use of information generated from such undertaking. Transparency will entail meaningful consultation with the stakeholders and the availability of current, complete, credible and accurate information on evaluation results to the public. To ensure competency, evaluation will be carried out by well-trained, experienced and qualified team. Evaluations will likewise be objective so as not to reflect personal or sectoral interests and will be conducted with due regard to rights, beliefs and customs. It must also be sensitive to and address issues of discrimination and gender inequality.

The evaluation criteria are anchored, among others, on (1) economics, efficiency and effectiveness of measures (2) timeliness of delivery (3) relevance (4) prioritization based on urgent health and/or environmental needs and (5) sustainability. Economics, efficiency and effectiveness relate to the affordability of the measure as well as the productive use of resources and the value or outcomes derived from the allocation of such resources. Timeliness involves a logical sequence of interventions or activities that will be carried out according to priorities and extent of impacts based on certain practical considerations such as, but not limited to, strategic areas for achieving high reduction on mercury use and lessening existing health and/or environmental risks. Relevance delves into the extent of validity of the objectives and the consistency of the activities and outputs with the overall goal and attainment of the objectives and the intended impacts and effects. Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after the ASGM interventions shall have ceased.

Evaluation Methodologies

Internal and external evaluation will be carried out in a time-bound manner to determine results and outcomes based on established criteria. Internal or self-evaluation will entail an annual review by all organizations engaged in implementing the NSP for timely feedbacking, tracking and highlighting of achievements, reviewing of roles of various players, identifying constraints, best practices and lessons learned over the period and for the reorientation of activities, if and when necessary, to align with the objectives of the NSP. The evaluation findings will likewise be translated into a workplan for the ensuing year. The workplan will address the gaps identified. Internal evaluations will likewise cover granting of recognition and incentives to ASGM stakeholders and partners for outstanding performance. To ensure credibility and

competency of internal evaluation, concerned stakeholders will undergo training and/or updating of evaluation skills as well as development and implementation of evaluation plans.

External evaluation, on the other hand, involves independent review by evaluators not involved with the implementation of the NSP. External evaluation will take place in 2015 (mid-term) and in 2020 (terminal evaluation). The mid-term evaluation will focus, among others, on the assessment of the impact of implementation activities on the overall goal of reducing and eventually eliminating mercury use in ASGM, the adoption of cleaner gold production alternatives and the institution of needed reforms to address the social, institutional, regulatory and other issues and concerns besetting the sector. The results of the mid-term evaluation can be used as basis in re-framing or fine-tuning objectives, strategies and activities for the second half of the plan implementation.

Outcomes and impacts will also be analyzed in terms of their contribution towards the attainment of certain key development priorities (Millennium Development Goals) in small-scale gold mining communities based on data generated from the Community-Based Monitoring Strategy (CBMS) survey of local government units that are host to ASGM activities. Specific MDGs that may be linked with ASGM interventions include eradication of extreme poverty, achieving universal primary education, promoting gender equality and empowering women, combating malaria and other diseases and ensuring environmental sustainability in ASGM communities.

Evaluation activities will be carried out using as basis the benchmarks and targets as outlined in the plan and the criteria and indicators as agreed upon by the stakeholders.

Evaluation will employ a combination of any of the following: (a) formal and informal surveys, (b) semi-structured interviews, (c) key informant interviews, (d) focus group discussions, (e) community meetings, (f) case studies, (g) participatory rural appraisal, (h) direct observation, (i) analysis of written documents, and (j) review of implementation methods.

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[1] This figure is based on the data obtained from MGB, and review of provincial profiles
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[7] Desiree M. Narvaez, Human Exposure to Mercury in Fish in Mining Areas in the Philippines, 2002
[8] Ban Toxics!, pp. 61
[9] Dr. Edmundo Prantilla, 2008
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[11] Ethelyn P. Nieto, Health and Environmental Risk Assessment Among Mother and Child Residents Living Near an Abandoned Mercury Mine: A Toxic Legacy, 2006
[12] Fish species namely ibis, tabas, lapu-lapu and torsillo registered NV>0.5 ug/g fw total mercury level and NV>0.3 ug/g fw methylmercury level which are accordingly beyond the acceptable mercury levels in fishes.
[13] Nieto, 2006
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[21] Ban Toxics!, pp. 22

[22] Copperwiki website, last accessed March 15, 2010

[23] Idem

[24] Ban Toxics!, pp. 22

[25] Checklist of Requirements for the Application of Permit/License under PD 1899

[26] Based principally from the UNESCO Evaluation Handbook, 2007 http://unesdoc.unesco.org/images/0015/001557/155748e.pdf