

**AUDIT OF THE EFFICIENCY  
OF THE PROCEDURE FOR  
ISSUE OF LICENCES FOR  
GEM INDUSTRY AND THE  
EFFECT OF GEM INDUSTRY  
INCLUDING THE  
ABANDONED MINES ON THE  
COMMUNITY AND  
ENVIRONMENT – 2012**

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**Performance and Environment  
Audit Unit**



**Auditor General's Department**



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## Executive Summary

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An adverse effect on the maintenance of the health of the community caused due to the failure to close the mines, both licenced and unauthorized, properly or according to the specifications was observed. It was observed that this situation has resulted in the spread of dengue and brain fever and caused an adverse impact on the environment in the Ratnapura District . According to a survey of the diseases spread by mosquitos such as dengue and brain fever in the Ratnapura District, carried out by the Entomological Division of the Ratnapura Provincial Department of Health the density of culex mosquito in the areas with a large number of patients is 53 per cent while the density of culex mosquito in the open mines of the district is 68 per cent.

The National Gem and Jewellery Authority maintains a process for the grant of licences for the gem industry and its success is a key factor in the survival of the health conditions community and the environment. Therefore, the objective of this audit is to study the impact of the gem industry including the abandoned mines in the district on the health of the people, survival of the organisms and the environmental equilibrium and make practical recommendations. The following observations were made in the audit carried out.

- (a) The non-deposit of topsoil removed in the excavation of mines for closing the mines was observed as adverse to environment while washing gem deposits causing pollution of rivers and canals also affects the environment adversely.
- (b) The supervision of mechanized mining was observed as unsatisfactory and the site inspections carried out by the Authority are inadequate. The CCTV cameras to be installed for the supervision of mining work had not been installed at any of the mines inspected.
- (c) Larva of mosquitoes causing malaria, filaria and brain fever were rampant in the water logged open mines and that had resulted in the spread of diseases such as malaria and brain fever in the Ratnapura District.
- (d) The water sources had been adversely affected due to the unauthorized mining in the reservation made for protection of rivers, canals and water sources.
- (e) Safety of bridges is threatened due to the inadequacy of protective bunds reserved for bridges (Bride near Kahawatta Town is an example).
- (f) Detection of non-compliance with the laws, rules, etc. relating to the excavation and closing of mines can be cited as a weakness in supervision.
- (g) Protective fences had not been erected around mines while the labourers employed in the industry had not been made aware of the insurance shceme for labourers.

- (h) Rock blasting done without complying with the set specifications and excavation of mines by using backhoe machine of excess capacity had adversely affected the environment and the community.
- (i) Serious health and environmental problems had arisen due to the weaknesses in the implementation of laws, rules, etc. relating to mechanized mines.

The following courses of action are recommended for the regularization of the gem industry and to bring the deteriorated health conditions adversely affecting the community of the district to a manageable level, to minimize severe environmental problems such as landslides impact of floods and damage to water sources and also to minimize the legal expenses, compensation and the general expenditure on health and environment and the environmental responsibilities of the Government.

- (a) The National Gem and Jewellery Authority to establish and implement a Co-ordinating Committee consisting of sections such as Health, Defence, Wildlife, Forest, Lands and Irrigation.
- (b) Strengthen the existing laws, rules, etc. on the closing of gem mines.
- (c) Increase the deposits payable for obtaining licences for excavating gem mines, to be adequate to cover the expenditure on closing gem mines.
- (d) Carry out on site inspections according to a plan.
- (e) Preparation and implementation of a systematic plan for regulation of mechanized mines.
- (f) Making and implementation provision for blacklisting of the licenced miners for gem industry who do not comply with in relevant laws, rules, etc. and the strict implementation of such provisions.
- (g) Creation of a proper plan for closing of mines remaining without being closed at present.
- (h) Implementation of a compulsory insurance scheme for the labourers deployed in the gem industry.

It is observed that the above proposals will lead to the improvement of gem industry.

**AUDIT OF THE EFFICIENCY OF THE PROCEDURE FOR ISSUE OF LICENCES FOR GEM INDUSTRY AND THE EFFECT OF GEM INDUSTRY INCLUDING THE ABANDONED MINES ON THE COMMUNITY AND ENVIRONMENT – 2012**

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1. Introduction

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1:1 Background

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Gemming industry makes a significant contribution to the Gross Domestic Product and according to the annexed table, it is an important factor in the foreign exchange earnings. The gem industry is centred in the Ratnapura, Matale, Polonnaruwa, Moneragala and Badulla Districts while the Ratnapura Districts commands a world-wide reputation for gem industry. The gem industry is widely in operation in all the areas of Divisional Secretaries in the Ratnapura District. The gem mines falls into the following three main categories.

- \* Traditional mines operated with human labour
- \* Unauthorized extraction mines operated by utilizing flowing water courses
- \* Mechanized mines operated with backhoe or loader machines

The National Gem and Jewellery Authority maintains a process for the grant of licences for the gem industry and its success is a key factor in the survival of community and the environment. There are a large number of abandoned mines in the districts causing a severe threat to the health of the people and the survival of the organisms, while adversely affecting the environmental equilibrium. Therefore, the objective of this audit is to study the situation and make practical recommendations.

1:2 Authority for Audit

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The audit of the efficiency of procedure for issue of licences for gem industry and the effect of the gem industry including abandoned mines on the community and the environment was carried under my direction in pursuance of provisions in Article 154 of the Constitution of the Democratic Socialist Republic of Sri Lanka and the Finance Act, No. 38 of 1971. The provisions in the National Gem and Jewellery Authority Act, No. 50 of 1993 and the provisions in the Annexe to the Application Form used by the National Gem

and Jewellery Authority for the grant of licences for gem mines were also utilized for the purpose of this audit.

### 1:3 Scope of Audit

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Gemming activities of the areas of Divisional Secretaries of Ratnapura, Kuruwita, Nivitigala, Pelmadulla, Kahawatta, Opanayaka and Eheliyagoda of the Ratnapura District where extensive gemming operations are carried out in Sri Lanka, were taken into consideration for the audit inspection. Ratnapura Office of the National Gem and Jewellery Authority had granted 3,676 licences in the year 2012. Due to the limitations of physical and human resources available for the audit the activities relating to 50 licences granted were subjected to the inspection.

### 1:4 Audit Criteria

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In carrying out the audit, it was expected that the National Gem and Jewellery Authority had utilized the following criteria.

- (a) Whether the procedures, principles and standards for the minimization of environmental and social responsibilities relating to the gem industry including the abandoned mines are maintained continuously.
- (b) Whether the programmes are implemented on priority basis for the elimination or minimization of the social and environmental adverse effects caused by the abandoned mines.
- (c) Whether the systems and sub-systems relating to the process for the grant of licences for gem mines have been properly planned and that they are implemented properly.
- (d) Whether the conditions attached to the licences granted for gemming have been properly complied with by the respective miners, and
- (e) Whether there is a course of action for the minimization of the environmental responsibility and environmental expenditure caused by adverse environmental effects.

## 2. Detailed Report

### 2:1 Status of Site Inspections

The status of 13 mines situated in the six areas Divisional Secretariats in the district subjected to site inspections is given below.

Divisional Secretariat and File Number	Location	Existing Status of Mines
Elapatha 2/78943	Uduwella Dambluwana	<ul style="list-style-type: none"> <li>* Discarded water with sediment improperly released to Kaluganga.</li> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> </ul>
Kuruwita 4/78105	Theppanawa, Pahalage Alutwatta	<ul style="list-style-type: none"> <li>* Instead of 44 feet reservation for the road, a reservation of 24 feet only had been made.</li> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> </ul>
Opanayake P76061	Hunuwela Manwadigahawatta	<ul style="list-style-type: none"> <li>* The open mine was filled with water.</li> <li>* Even though 150 metres had to be allocated for the Weganga reservation, allocation made had been about 40 feet.</li> </ul>

- |                     |                          |  |
|---------------------|--------------------------|--|
| Opanayake<br>P73090 | Pannila Talwatta         | <ul style="list-style-type: none"> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> <li>* Unauthorised mines had been excavated.</li> <li>* An area of about 20 feet of the mine land close to the river had eroded into the river. The mine owner had stated that it was due to unauthorized excavation of mines.</li> <li>* Due to the extraction mines existing in the river at this location, the river is widened extensively causing environmental damage.</li> </ul> |
| Opanayake           | Hunuwalawatta            | <ul style="list-style-type: none"> <li>* Many unauthorized excavations of mines had been done near the brook on this land belonging to the Government. Mines were filled with water.</li> </ul>  |
| Kuruwita            | Pathagama<br>Polgahawela | <ul style="list-style-type: none"> <li>* Many unauthorised excavations of mines were seen on the paddy field adjoining the main road and the mines were filled with water.</li> </ul>  |
| Kahawatta           | Kahawatta Town           | <ul style="list-style-type: none"> <li>* Mines had been excavated in the</li> </ul>  |



reservation of the bridge over Weganga at Kahawatta Town.

Ayagama 4/78851	Kiriellawatta Nammuniyatenna	<ul style="list-style-type: none"> <li>* Mining had been abandoned 05 months ago and the mines were filled with water.</li> <li>* Water used for sifting had been diverted to a nearby brook through a drain.</li> </ul>
Ratnapura 172- 1/-1/4/51040	Ketaliyanpalla Hirikumbura Chathurana Land	<ul style="list-style-type: none"> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> </ul>
Kuruwita 172/1/4/59375	Theppanawa Ovitigama	<ul style="list-style-type: none"> <li>* In the excavation of mines using backhoe machines the layer of topsoil had not been separated for easy identification.</li> <li>* A Supervising Officer had not been deployed on full-time basis and CCTV cameras had not been installed for supervision of activities of the work site.</li> <li>* Backhoe machines of PC135 capacity had been used instead of machines of PC120 capacity approved.</li> <li>* Even though rock blasting had been done with explosives no approval had been obtained.</li> <li>* The pits of previous excavations done on the licenced land had not been closed properly and the filling had sunk and the pits were filled with water.</li> </ul>

## 2:2 Other Important Observations

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### 2:2:1 Non-separation of Topsoil for closing Mines

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According to the letter dated 31 August 2004 of the Director General of the National Gem and Jewellery Authority, the layer of topsoil excavated should be deposited in a manner to enable the use of topsoil to cover the top of the closed mines. Nevertheless, such instructions had not been followed in respect of Udawatta Dambuluwana, Hunuwala Manwadigahawatta, Theppanwa Ovitigama work sites. This is clearly depicted in photographs 1,2 and 3.



Photograph 1 : Udawatta Dambuluwana  
(2/78943)



Photograph 2 : Hunuwala Manwadigahawatta  
(8/76061)



Photograph 3 : Theppanwa Ovitigama (4/59375)

### Comments of the Institution

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The topsoil removed first in the excavation of mines is not heaped separately and the layers of earth excavated thereafter are heaped on that. The earth is heaped in such manner as it involves heavy costs in moving earth in mechanized mining and the importance of the use of the land for the purposes of the industry.

## 2:2:2 Washing Gem Deposits causing pollution of Rivers, Canals and Brooks

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According to the Circular No. NGJA/16-2/2012/Backhoe-1, washing of the deposits from excavations should be done without allowing the discarded water to flow into rivers, canals and brooks while a methodology for minimizing the environmental damage should be determined and followed through a report of a Mining Engineer. Nevertheless, instances of diverting such water direct to the rivers, canals and brooks were observed in respect of Udawatta Dambuluwana, Kiriellawatta, Poroduwa Pelmadulla. Details appear in photographs 4,5,6 and 7.



Photographs 4,5 : Udawatta Dambuluwana (2/78943)



Photograph 6 : Kiriellawatta (4/78851)



Photograph 7 : Poroduwa Pelmadulla (P/81345)

### Comment of the Institution

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Licence holders are regularly instructed to release the water discarded in washing gem deposits to the environment after recycling without damaging the environment. If they release the water direct to canals, brooks and rivers, legal action (in terms of Circular No.121-6) is taken against them.

### 2:2:3 Weaknesses in the Supervision of Mechanized Mines

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According to paragraph 1(4) of the Circular No. 16-2/2012/Backhoe-1 dated 19 March 2012 of the National Gem and Jewellery Authority a CCTV camera systems should be installed at mechanized mine work sites. Nevertheless, the camera systems had not been installed at the following work sites. According to paragraph 1(3) of the above circular, a suitable officer should be deployed for each mechanized mining licence for the full-time supervision of the work done under such licence. Nevertheless, it was observed that the said requirement as well had not been complied with in respect of the following work sites.

Licence Number	Location
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P/81345	Poroduwa, Pelmadulla
P/80265	Pathakada, Pelmadulla
P/75590	Godagama, Pelmadulla

#### **Comment of the Institution**

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Four Supervisors have been deployed at present for the supervision of mechanized mines and in addition, six Implementation Officers and Development Officers have been deployed. The circular states that depending on the practical situation, the Authority will decide to appoint an officer to supervise several mines.

### 2:2:4 Breeding of Mosquito Larva due to the failure to close mines properly and Pits remaining filled with water

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Instances of failure to close the mine pits after completion of gemming activities were observed and there was no evidence that the authorities concerned had paid any attention in that connection. Those pits were filled with water resulting in the breeding of mosquito larva posing a severe threat to the health of the public due to the spread of dengue and brain fever. There was evidence to prove that the recent spread of the Japanese Encephalitis disease throughout the district had been due to the above condition. The



existing position of the work sites at Hunuwala, Manwadigahawatta, Kiriellawatta, Theppanawa, Ovitigama and Pathagama Polgahawela is clearly depicted in photographs 8,9,10 and 11.



Photograph 8 : Hunuwala Manwadigahawatta (P/76061)



Photograph 2 : Kiriellawatta (4/78851)



Photograph 10 : Theppanawa Ovitigama (4/59375)



Photograph 11 : Pathagama Polgahawela

**Comments of the Institutions**

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Excavation of mines is temporarily stopped due to reasons such as various practical problems encountered during excavation such as mechanical defects of machinery, adequate labour not reporting to work, heavy rains and completion of sifting of excavated deposits. Nevertheless, instructions have been issued to take action to close the pits of active mines if those are water-logged continuously, or places conducive to mosquito breeding or to take alternative action for the prevention of mosquito larva breeding.

## 2:2:5 Use of Reservations made for Rivers, Canals, Brooks and Water Sources for Unauthorised Mining

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It was observed that the use of reservations made for rivers, canals, brooks and water sources for unauthorized mining had resulted in the destruction of those reservations. It was further observed from photographs 12 and 13 that it had adversely affected in community and caused severe damage to the environment.

Example 1 : Even though the letter dated 31 August 2004 of the Director of the National Gem and Jewellery Authority required setting apart a reservation of 150 metres for the Hunuwala Manwadigahawatta river in the area of the Opanayaka Divisional Secretariat, a reservation of 40 feet only had been set apart. This is clearly depicted in the photograph 12.



Photograph 12 : Hunuwela Manwadigahawatta

### Comment of the Institutions

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A reservation of 33 feet is set apart for a river under a normal gemming licence while a reservation of 150 feet is set apart for a river under mechanized excavation of mines. If the Implementation Officers report on mines excavated in the reservations during supervision those will be punished in terms of Circular 121-6. If the same offence is committed in 03 instances, licence will be cancelled and the deposit will be confiscated. Conciliation fees were recovered in connection with the excavation of mines in the river reservation of Hunuwala Manwadigahawatta referred to in the report and instructed to close the mines excavated in the reservation.

Example 2 : Gemming had been carried out without setting apart an adequate reservation for the Weganga situated near Kahawatta Town. The reservations made for the bridge over the Weganga flowing through Kahawatta Town had been used for unauthorized gemming and it was observed that it had posed a severe threat to be continued existence of the bridge.



Photograph 13 : Kahawaththa

### **Comment of the Institution**

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The excavation of mines under the licence for the land near the bridge in the Kahawatta Town is done by setting apart the reservation made for the bridge. Nevertheless the excavation of mines under this licence is suspended at present for breach of conditions.



## 2:2:6 Removal of Rocks in Gemming Sties through Unauthorized Rock Blasting

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According to condition 7 of the licence, when explosives have to be used for removal of rocks from gemming sites, approval therefor has to be obtained in advance. Nevertheless, such approval had not been obtained for the work site at Theppanawa, Ovitigama situated in the area of Kuruwita Divisional Secretariat. Kuruwita Divisional Secretariat had reported that the use of rock blasting and backhoe machines had damaged houses. This position is clearly depicted in photograph 14.



Photograph 14

### Comment of the Institution

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Rock blasting without obtaining approval is a breach of the conditions of licence. Action in terms of Circular No. 121-6 will be taken against the licence holder for the breach of conditions of licence.



### 2:2:7 Use of Machinery exceeding the capacity of Machinery approved for Mechanized Gemming

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Even though the capacity of machinery used for mechanized gemming should be PC 120, machinery with PL 135 capacity had been used. This is clear from the mine site relating to File No. 1/172/1/4/59375

#### **Comment of the Institution**

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Action taken by using machinery exceeding the approved machine capacity is a breach of conditions of licence. When such instances are reported action in terms of Circular No. 121 will be taken against the licence holders.

### 2:2:8 Lack of Security Fences constructed around Mines

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According to condition 10 of the licence, the licence holders should construct a security fence around each pit of mine excavated to provide security for persons in or on the land. Nevertheless, security fences had not been constructed at any of the mines inspected.

#### **Comment of the Institution**

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Barbed wire fences have been constructed enclosing the pits and the entire mining land. These fences are not constructed around small scale mines. Watch duties are in operation for each mine and the external parties are not allowed to enter these premises. When unsecured mines are detected by the Supervising Officers at field inspections, they always give instructions to follow the specified security measures.

### 2:3 Unauthorized Mines

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Gemming industry carried out through extraction mines as well as mining by using reservations also were observed. This practice had led to silting of all riverbeds in the district causing flood threats to the community. This results in health problems to the people whose source of water for basic needs is the river. It was also observed that this condition could affect large scale water

supply projects. It was further observed that to the unauthorized extraction mines could deviate the courses of rivers thus causing severe environmental problems. This is further observed from the photographs 15, 16 and 17.



Photograph 15



Photograph 16



Photograph 17

**Comment of the Institution**

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It has been decided to take action without causing nuisance to the industrialists engaged in the mining industry and the raids on unauthorized gemming in the Ratnapua District had been suspended by the Police after October 2012. As such unauthorized gemming in rivers has increased at present.

03. **Non - implementation of Control System and Procedures**

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The following deficiencies were observed.

- (a) According to condition 16(e) of the gemming licence, the names of employees of the mine, names of partners, etc. should be furnished to the office which issued the licence, before the elapse of three days from the commencement of mine excavations. But that requirement had not been complied with.

- (b) In terms of Section 14(1) of the National Gem and Jewellery Authority Act, No. 50 of 1993 an insurance scheme should be implemented for those engaged in the gemming industry as a protection against death or physical injury. Nevertheless, it was observed at the site inspections carried out at the following sites that the workers of the respective work sites had not been made aware of such scheme.

Licence Number

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64076

78943

78105

51040

64213

64385

- (c) Even though the Implementing Officers had been instructed to carry out regular inspections of mines for which public objections have been received, the requirements had not been complied with in connection with file No. 64076.
- (d) In terms of Circular No. NGJA/16-2/2012/Backhoe-1 dated 19 March 2012, a study of water sources, roads, lands and houses should be carried out and a methodology should be determined and instructions issued for minimizing damage with a view to stabilization of the environment. But such matters had not been taken into consideration in the grant mining licence Nos. 78105 and 80265.
- (e) According to paragraph 6 of the above circular the Lands and Development Divisions should supervise the mechanized mines from time to time. But it had not been so done in connection with the mining licence Nos. 76997 and 64072.
- (f) According to paragraph 3 of Circular No. NGJA/16-2/2012/Backhoe 1 dated 19 March 2012, a full-time Supervising Officer should be appointed to supervise each mechanized mining operation. But it had not been so done in connection with the work sites relating to licence Nos. 78943, 78105 and 73090.

#### 4. Conclusions

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The gem industry operated in an unsystematic manner could adversely affect the health of the people and could result in the loss of environmental equilibrium. The financial results and the financial position of the Authority could be adversely affected by the legal expenses and responsibilities cost on the Authority from legal action taken against the Authority by external parties. It could adversely affect the national economy through the increase in the overall health expenditure of the country.

#### 5. Recommendations

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The following courses of action are recommended for the regularization of the gem industry and to bring the deteriorated health conditions adversely effecting the community of the district to a manageable level, to minimize the possible severe environmental problems such as landslides, floods and damage to water sources and also to minimize the environmental responsibilities and environmental expenditure.

- (a) The National Gem and Jewellery Authority to establish and implement a Co-ordinating Committee consisting of sectors such as Health, Defence, Wildlife, Forest, Lands and Irrigation.
- (b) Strengthen the existing laws, rules, etc. on the closing of gem mines;
- (c) Increase the deposits payable for obtaining licences for excavating gem mines by taking into consideration the expenditure needed for closing of mines;
- (d) Carry out on site inspections according to a plan;
- (e) Preparation and implementation of a systematic plan for regulation of mechanized mines;
- (f) Making and implementation provision for blacklisting of the licenced miners for gem industry who do not comply with in relevant laws, rules, etc. ;
- (g) Creation of a proper plan for closing of mines remaining without being closed at present; and
- (h) Cause the implementation of a compulsory insurance scheme in terms of the provisions in the National Gem and Jewellery Authority Act for the labourers deployed in the gem industry to ensure their protection and security.

