Addendum to:

Environmental Impact Assessment for Tourist Resort Development on Malefushi Island – Thaa Atoll

Proposed by
Investment Venture Pvt. Ltd.

September 2012

Prepared by
M.S. Adam
EIA01/07

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Declaration the Consultant

I certify that the statements made in this Environmental Impact Assessment are true, complete and correct to the best of my knowledge and available information at the time of writing this report.

M. Shiham Adam (EIA01/07)
20 September 2012

Proponent:

Mr. Mohamed Ali Janah
Investment Venture Private Ltd

Signed: ……………………………………

އެގްޒެކެޓިވް ސަމަރީ

1. ކޮޅުމަޑުލު (ތ.އަތޮޅު) މާލެފުށީގައި 2005 ވަނައަހަރު ޏ. ފުވައްމުލަކު މުތީގެ އަލްފާޟިލާ ފާތިމަތު މުޙައްމަދު ދިރިޔައަށް ބޭއަރިސޯޓް ރިސޯޓެއް ތަރައްޤީކުރުމަށް މިނިސްޓްރީ އޮފް ޓޫރިޒަމް (އާރޓްސް އެންޑް ކަލްޗަރ) އިން ދޫކުރައްވާފައިވާ ރަށެކެވެ. މިރަށުގައި ރިސޯޓު ތަރައްޤީކުރުމަށް ޕްލޭންކުރުވިފައިވާ ބޭއަރިސޯޓް ރިސޯޓު ތަރައްޤީ މަޝްރޫޢުގެ މަސައްކަތުގެ ފެށުމުގެ ކުރިން ތިމާވެއްޓަށް ކުރާނެ އަސަރު ފޯރާނެ މިންވަރު ބަޔާންކުރާ ރިޕޯޓު ތައްޔާރުކޮށް ހުށަހަޅައިފައިވަނީ 2006 ޖުލައި މަހުގައެވެ. އެ ރިޕޯޓުގެ ތިމާވެށީގެ ގޮތުން ނިންމުމުގެ ލިޔުން ލިބުމަށްފަހު މަޝްރޫޢުގެ އަމަލީ މަސައްކަތް ފެށިފައިވަނީ 2009 ވަނައަހަރުގެ ފަހުކޮޅުއެވެ.

2. މާލެފުށި ތަރައްޤީ މަޝްރޫޢުގެ މަސައްކަތް 2011 އާއި ހަމައަށް ކުރަމުން އައިސްފައިވަނީ މާލެފުށި އިންވެސްޓްމަންޓް ޕްރައިވެޓް ލިމިޓެޑުންނެވެ. މިކުންފުނީގެ ހިއްސާގެ މަސްޓުރު ބައިންސް ޕްރައިވެޓް ލިމިޓެޑް ކުންފުނީގެ ހިއްސާވާ ކުންފުނިތަކެވެ. ނަމަވެސް، ކުންފުނީގެ މާލީ ހާލަތު ދަރަނި ގޯސްވުމާއި 2011 ވަނައަހަރުގެ ކުރީކޮޅުން ފެށިގެން މަސައްކަތް ވަނީ ހުއްޓުމަކަށް އައިސްފައެވެ. މިގޮތުން މަސައްކަތް ހުއްޓާލިއިރު ތަރައްޤީ މަޝްރޫޢުގެ 75% -80% ނިމިފައިވާ ކަމަށް ވަނީ ބެލެވިފައެވެ.

3. މާލެފުށީގެ އިންވެސްޓްމަންޓް ވަނީ އޯގަސްޓް 2012 ގައި އިންވެސްޓްމަންޓް ވެންޗަރ ޕްރައިވެޓް ލިމިޓެޑަށް ވިއްކާލާފައެވެ. މިކުންފުނީގެ ސިންގަޕޫރު ޕާޓްނަރުން ހިއްސާވާ ރަޖިސްޓަރީ ކޮންފަރާ ކުންފުނިތަކެވެ. އަދި އެދިސާލާން އެނިގެން ބަދަލުވެ ހުއްޓިފައިވާ މަސައްކަތް އިންވެސްޓްމަންޓް ވެންޗަރ ޕްރައިވެޓް ލިމިޓެޑުން ވަނީ މަސައްކަތް އަލުން ފަށާފައެވެ.

4. އެދިޔާރު ބަދަލުތަކާއި ގުޅިގެން އިންވެސްޓްމަންޓް ވެންޗަރ ޕްރައިވެޓް ލިމިޓެޑް އިން ދެކެފައިވާ ހުށަހެޅި ދެކޮޅު ފަރާތުގައި އަލުން ގެންދާ މުޅި ފަށްކަން އިތުރު 6 ގެ (ޖުމްލަ 7 ކޮޓަރި) އިތުރު ކުރުމަށެވެ. މިހެން ހަދަން އެފަރާތުން ނިންމާފައި ކޮޅުމަޑުލު ސަރަހައްދަކީ އިތުރު ބަނގުލާ ނުވާ ސަރަހައްދުކަށްވެފައި ވިއްލާތަކުގެ އިންޓީރިއަރ އާއި ސްޓާފު ގެސްހައުސްގެ ވިސްނުމުގައެވެ. މި ސްޓާފު ކޮޓަރި، ނަފާގެ އެޑްމިން ރިސެޕްޝަން، މިބުނެވުނު 6 ގޭގު ގެ އެކުރުގެ ސަރަހައްދުން (2006 ގައި ހުށަހެޅުނު ރިޕޯޓުގައި ފާހަގަކޮށްފައިވާ ތިމާވެށީގެ އަސަރު ފޯރާން މައްސަލަތަކުގެ) އިތުރަށް ދިރާސާކުރުން ތިމާވެށީގެ މައްސަލަތައް ދެކޮޅުހެދުމާއި އަދި އެފަދަ ކަންކަމުން ވެއްޖެނަމަ އަސަރު ފޯރާނެ މިންވަރު ދެނެގަނެ އަދި އެ އަސަރުތަކެއް ވިޔަވަސް ކުޑަކުރެވޭ ފަދަ ރައްކާތެރިކަމާއެކު މަސައްކަތް ކުރުމަށް މަގުފަހިކުރުމެވެ.

5. މިދު ގެ އަދުވަސް ގެންދާ ރަށުގެ ހުސްބިމު ދުވާލު ފަހަރަކު ތަރައްޤީކުރުމަކަށެވެ. 2006 ވަނައަހަރު ކުރެވުނު ސާރވޭގައިވެސް އަދި މި އެކްސްޕާރޓްގެ މަސައްކަތަށް ކުރެވުނު ސާރވޭއިން އެނގޭފަދައިން މިސަރަހައްދަކީ ތިލަ ފަށެވެ. ފުރުމަތީގައި ގަސް މަދުވެފައި ބިމުގައި (ބޭކާރުގަނޑު) އެކަށީގެންވާ ރާޅު/ހިރަފުން ދަޅުވެލިންނެވެ. މަދުވެފައިވާ އިސްރާފު ފުރަތަމަގެ ބައިބައި ހާލަތުގައި މިސަރަހައްދުގައި ހުރިހާ ގޮތަކުން ޖެހިލަ ގޮތެއްގައި ދެންނެވީ މިސަރަހައްދަށް ގެއު ނަމެ، ހާއި ބޮޑުކަން ދިޔާ ގެއު ނަމެ ދެންނެވި ފެންވަރެއްކަމުގައެވެ. މިސަރަހައްދުގެ ފެންމިނަކީ 1.5_2.0 މީޓަރު ކަމުގައިވުމުން މިދު ގެ އެޅުމަން ބޭސްމަންޓާ މުޅި (ކޮންކްރީޓް ބޭޒް)ތަން ޖަހަން ނިންމާފައިވަނީ ފުރަތަން ތިލަ ހަކޮޅު-ބާރުޖެހޭގެ ފަރުދާގަނޑު މަތީގައި މަސައްކަތް ކުރެވޭނެ އެކްސްކަވޭޝަނާއެގެ

ހެރީގައެވެ. މިހެންވެ، މަސައްކަތް ކުރުމުން ދާއިރު ސަރަހައްދަށް ހިމާޔަތްކުރުމުގައި ތަނަވަސްކޮށްދީގެން ފާހަގަކޮށް ކުޑަކުރެވޭނެ މިގޮތުން ކޮންމެ ދުވަހަކު އަސަރު ކުޑަކުރެވޭނެއެވެ .

6. އެންމެ ކުރީގައި ބޮންޑަރީ 6 މީޓަރު ގެ އެތުރުގައި މަސައްކަތް ކުރާނެ ގޮތާއި މަސައްކަތް ބަލަހައްޓާނެ ގޮތް ބަޔާން ކުރެވިފައެވެ. އެކަން ކުރުމުން އަދި ކުރެވޭ މި މަސައްކަތުން ފެއިބުން ކޮންމެ އަސަރެއް ވާނެއެވެ. އަދި ނުރައް އަސަރު (ރީފް) ކުރެވޭ ރީފް ފަރު، ތަން ކައިރީ އިތުރު ކަމެއް ކުރާ ހިމާޔަތްކުރުމަށް ބަދަލުކުރެވޭ އަނބުރާ ފަސްކުރެވޭނެ. ތިމާވެއްޓަށް އަސަރުކުރާ މިގޮތަށް މަސައްކަތުގެ ސާފުން ސަރަހައްދުން ޖެހިކުރުމުގައި މުދަލު ފެއިބުން ތަކެއްޗާއި އަދި ތަން ތަނަވަސްކުރުމާއި އަދި ބިމުތަކުގެ މަސައްކަތް ނިމުމުން ފަރުގެ މަތީގެ މަސައްކަތް ކުރުމުން ދިޔައިރު މުދަލު ކުނިބުނި އެތަނަ ނުދިނުމަށް ދަނޑުގައި ދައް (ނޮޓް) ހަރުކުރެވޭނެއެވެ. އަދި މުޅި ބޮޑު ތަކެއް ބަލައިގަނެ ހިފައިވާ ސަރުކާރުގެ މިންވަރު މަދުކުރުމަށް އަމަލުކުރެވޭނެ ކުރެވޭނެ ކަނޑަށް ކުރުމުން ގެންދާނެއެވެ.

7. ނުލާތު 6 ގައި ބަނދަރު ފޯރުކޮށް ކާރީގެ ނުދާނެ އަސަރު މަދުކުރުމަށް ކުރަންޖެހޭ ކަންކަން ދާން ހަރަދަ ކަނޑުބައިރު ގެ މަސައްކަތްތަކާއި އަދާގައި ހިމެނޭ އެހީތެރިވާނެ. ނަގާފައި މިކަންކަން އުދައާރު ފުރިހަމަކޮށް ޖެހޭ ނަގާން ކަމުގެ ކާމިޖަހަނި ފެޖަރ މިރިހީ ބެހޭގައި އެބާވާ ކުރިފުޅީ ހުށަހަޅާފައެވެ .

8. ޖާނަވަރު ޕާކު ރައްކާތެރިކުރުމުގައި ގައި އަދި އެންމެހާ ފަރުތަކާ ފަރާތް ގުޅިގެން ބަހައްޓަ ޓަކައި 2006 ވަނަ އަހަރު ފަރާތާއި ފުރަތަމަ މަސައްކަތްތަކަށް. މަސައްކަތް ހުޅަނގު ދޮރު ދަށުގައި ދޮވަނުގެ ދެވަނަ ބާވަތް ބުރާ ތަނަށް މިހާރުވެސް މަސައްކަތް ފެއިބުނު ނެއެވެ. އަދި މިހެންނަމަ އަދި އިރު މުޅިއްކޮށްގެން ރީފްތަކެއް ހުޅަނގުގައި ނިމުމަކަން ވަރު ބަލަ ކުރިއެރުވުނެވެ. މިހެންވެ މި އެންމެކުރީ ޖޫރީއްނަ ވެސް ނުކުރެވޭ ހިންގަވަނީ ސަރުކާރުގެ ބަދަލު ކުރިޔަށް ދިމާލަށް ހޯދުނެވެ. އަދި މި އެންމެކުރި އަށް ބޭނުންކުރެވޭ ތިބުރު ޕެނެލް ހަނގަނި 03 މަސްދުވަހުގެ ތެރޭގައި ކުރި ދަށުގެ ފެނާއި ބޭސްކުރިން ހާލަތު އުފެއްދުމަށް ބޭރަށް ބާރުވެ ކުރާ ރީފްތައް ތަރައްޤީ ކުރުމުގައި ހިދާޔަތު އެއްބަސްވެއެވެ .

9. ޖާނަވަރު ފަރާތާ މަސައްކަތް ސެކްޝަން ގުޅިފައިވާ ދާ ބަދަލުގެ ސަބަބުން، 2006 ވަނަ ގައި އެކުލެވިފައިވާ މުވައްޒަފުން އަސަރު ފާހަގަ ރަނގަޅު ބޮޑުކުރާ ރީފްތަކުގެ ފާހަގަކޮށްފައި ކަނޑާމި އަދި އަސަރުތަކަށް ކަނޑާ ނުވާ އަސަރު(ދެވެ)ރަނގަޅުކުރުމަށް ދިގު އަސަރު އަދި ކުރުގެ މިސާލު ކަމެއް ރާކާވެ އޮފީސް ކަނޑު ނުކުރެވޭނެއެވެ. މީގެ މިގޮތުން ބަދަލު ދިރުމާއި ވަސީލަތް ބޭނުން އިތުރު ވަސީލަތް ފިޔަވައި ކަމެއް ނުބޭނުން ބޭނުންކުރެވޭ. އަދި އުފެއްދުމުގެ ބޮޑުތަކާ ދަރުން ކާނބިރުކޮށް މިހުރިވެސް ރާއްޖެއިން އަސަރުކުރާ ކުރެވޭ ކަނޑުތައް ގެނދާ މަސައްކަތްތަކަށް ރަނގަ ނުވައިދީ އިރުސާދު ދެވިފައިވާނެ.

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Executive Summary

1. Malefushi in Kolhumadhulu (Th. Atoll) was awarded in 2006 to Ms. Fathimath Mohamed Didi, Mutheege, Gn. Fuvahmulaku, by the Ministry of Tourism (Arts and Culture) for development of a tourist resort. The EIA for this development project was submitted in July 2006, and following approval of the EIA and issuance of Decision Note the construction work started in 2009.

2. As the proponent, Malefushi Investment Pvt Ltd, a subsidiary company of the well known Rainbow Private Ltd, lead the construction work of the project. However, due to financial constraints of the company the development work was suspended in early 2011. Some 75-80% of the development work was complete by then.

3. During August 2012, the development was sold to Investment Venture Private Ltd – a company registered in the Maldives, which is a partner company of a Singaporean property and resort developer. The development work of the resort resumed immediately following this of change of ownership.

4. With change of hands of the development, the new developer (proponent) is proposing to add 06 over-water bungalows (total 07 keys) to the existing row of over-water bungalows already constructed in the shallow lagoon on the southwestern side of the island. The rationale for this addition of 07 rooms is to help achieve economies of scale and maximize the return on investment. This Addendum Report (or scope change report) is to address the environmental impacts related this change in scope to the development project. This report identified potential environmental impacts and ways to minimizing them as practical as possible.

5. The environmental conditions of the area where these new water bungalows are being built have been described in the EIA report of 2006. Similar to the findings of the survey conducted for this report, the area has a sandy bottom with fine to medium sand. Few broken coral rubble were found scattered in the area. The depth of area is around 1.5-2.0 meters. In order to minimize sediment re-suspension an excavator mounted on a hatched-barge will be used as a working platform to place the pad foundations for the stilts.

6. The method of construction for the proposed 06 over-water bungalow units would be same as those described earlier in the EIA for the existing over-water bungalows. Therefore the predicted potential impacts would be similar. The mitigation measures that have been described in the earlier report will be enforced during the preparation and the construction of these 06 units. The mitigation measures would include measures for minimizing accidental release of construction debris and minimizing disturbance to area.

7. The costs of the mitigation measures have been included in the construction contract. However, the proponent takes the full responsibility and is prepared to bear the expense of this. A renewed letter of commitment is attached with this Addendum.

8. As indicated in the ToR for this addendum the construction work of the resort started in 2006 and was stopped in 2011. During this period monitoring reports were not forthcoming. Therefore the section on monitoring plan has been reviewed and updated. It is expected within three months of approval of this Addendum the proponent will submit a monitoring report providing an assessment of any changes to the baseline conditions of the environment.

9. The addition of the 06 over-water bungalow units to the existing row of water bungalows will not change the overall impacts described in the EIA report of 2006. Therefore there will not be additional environmental issues. However, it is strongly recommended to enforce the mitigation measures and follow up and strengthen the monitoring plan proposed during construction and post-development periods.

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1. Background

Malefushi Island in Thaa Atoll was awarded in 2005 to Ms. Fathimath Mohamed Didi, Muthee, Gn. Fuahmulaku, for developing a tourist resort. Malefushi Investment Company (MICO) Pvt Ltd proposed to develop a 100 bed high-end five+ star rated resort on the island. The EIA for the proposed development was submitted in July 2005[1] and following successful review the Decision Note was issued in October 2005.

The construction work started during 2009[2] and continued for about 20 months by which time nearly 80% of the proposed developed was completed. However, due to issue in financing the project construction work was suspended in 2010 and investment remained idle. During July 2012 the development was sold to Investment Venture Pvt. Ltd (IVPL)[3].

2. The Need for Change of Scope

The new investor, Investment Ventures Pvt Ltd bought this property because of the confidence they have in the Maldives even under the current global economic crisis. However, looking at the number of rooms in the previously approved Master Plan, the new investor is of the opinion additional over-water units were required. IVPL is proposing 6 over-water villas (5 single and 1 double making a total of 7 additional rooms) to make the investment sensibly viable. Presently there are no resorts on Th. Atoll and the logistics of the transport will have to maximize to achieve the expected return on investment.
It is on this basis the new investor is proposing this change. The revised and approved Concept Plan is annexed in Annex 6.

3. Terms of Reference

The terms of reference for this scope change was discussed at the scoping meeting held in EPA on 12 August 2012. The approved Terms of Reference is given in Annex 1.

4. Development Activity under Scope Change

The proposed development under the scope change is addition of six over-water units to the existing row of bungalow. The construction work of the over-water bungalows including access walkway in the original master plan has been completed by Malefushi Investment Pvt. Ltd. The additional units that will be added to this series are designed to be same in size and structural design. The construction technique and the material used for the

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[1] Environmental Impact Assessment – Tourist Resort Development on Malefushi Island, Thaa Atoll. July 2006.

[2] MoTAC's approval for construction was dated on 16 March 2009

[3] http://www.haveeru.com.mv/dhivehi/news/123601, Accessed August 2012.

additional water villas will be the same. The architectural drawing proposed by IVPL is given in Annex 2.

The most important construction work would be the placement of concrete pad-footings of the stilts. The footings will be cast ex-situ on the island. Following successful placement and leveling, each stilt will require extending vertically. This requires the form work on the stilts and casting with steel reinforced concrete. Once the cross beams are cast and form-works removed, works that require entering into water will be complete. The remaining work of assembling structures and finishing works of the bungalows should have negligible environmental impact, provided the mitigation measures are followed.

The lagoon area of the proposed development is about 1.5-2.0 m deep and so a hatched-barge will be used as a working platform. An excavator will be mounted on the barge for burrowing (or digging) and deployment of the footings (Figure 1).

Figure 1: An excavator mounted on barrage will be used to deploy the concrete footings at the site.

5. Existing Environmental Condition

Comprehensive description of the marine environment was provided in the EIA report submitted in June 2006[4] and therefore will not be repeated. The information provided here will be limited to the field survey of the substrate conditions of the proposed construction area (Figure 2and Figure 3).

Malefushi Island is on the eastern edge of a fairly closed atoll. The atoll aperture[5] is relatively small and strong flow is expected in the narrow passes. Despite the protection from the atoll reef, atoll lagoon experience rough conditions during the south west monsoon. The design of the jetties and the over-water structures have these conditions factored.

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[4] Environmental Impact Assessment – Tourist Resort Development on Malefushi Island, Thaa Atoll, July 2006, CDE Consultants(?), 149 pages.

[5] Atoll aperture is defined by the total length of the openings divided by the perimeter of the atoll reef. Atolls in the north Maldives have larger apertures while an atoll in the south has smaller apertures.

The lagoon[6] of Malefushi Island is large covering an area of approximately 70 hectares. The eastern side (ocean-ward side) is has quite an extensive reef flat providing protection to the island. Similarly the reef flat on the western side (atoll-ward) side is equally wide. The bathymetry of the reef flat is relatively even, around 1.4 – 2.0m.At the edges however, it drops of quite rapidly.

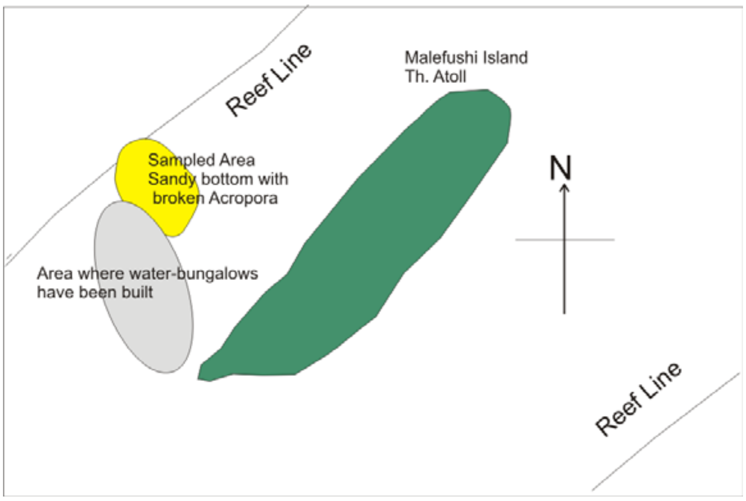

Figure 2: Survey area (shown in yellow) where new bungalows will be constructed where existing water bungalows are shown in grey -see Figure 3

A reef survey was carried out on 06 September 2012. Sequence of underwater photographs in the area marked development in Figure 3 was obtained. As expected the images revealed a substrate of coarse sand devoid of any hard corals. Pieces of broken Acropora sp. (branching coral) was founded in some areas. Towards the reef edge, however reef however, lives coral cover was significant. There were no obvious signs of damage or degradation caused by the construction activity.

Figure 3: Image of the island the surrounding areas to show the lagoon and are where development relating to scope change takes place.

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[6] Defined by the boundaries as described in the EIA report.

Lagoon Substrate: The lagoon area marked in Figure 3 has a substrate of coarse sand. Areas closer to the existing over-water bungalows is completely devoid of corals expect in few area where broken pieces of Acropora (Figure 4 right). The sand is soft and so it is likely to cause to some amount of sediment suspension and turbidity during placement of concrete footings. In areas closer to the reef the amount of broken Acropora on the substrate is significantly increased (Figure 4 left).


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Figure 4: Sample images of lagoon – the area where the new over-water bungalows will be built.

Coral Reef: The EIA reported average live coral cover of 15% consisting mainly Acropora, table corals, digitate and missives (porite heads). Close to 40% of the cover was estimated to be dead corals covered with algae and around 15% unconsolidated rubble and 32-35% sandy bottom. These results were in general agreement with what was observed on survey of the area (Figure 5 and Figure 6).

It is normal to observe large changes in substrate cover and composition even within spatial scales of less than few tens of square meters. Such observations were seen in the area surveyed.


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Figure 5: Sample images from the reef close to the sandy lagoon just in front of the proposed development area.

Figure 6: Typical images form reef top in front of the proposed development.

The composition of the substrate changes from the coarse sandy floor to coral rubble laden to live coral covered area as one moves away from the area.

Water Quality: Water samples were taken from two locations, one in the general lagoon area and other from the area of the development (Figure 7). The test results show that water quality is normal. The water was clear and with no traces of turbid conditions. The water quality results are given in Annex 3.

Figure 7: Area to show the water sampling location; Sample #1: Proposed Development Area; Sample #2: General lagoon area.

6. Impacts and Mitigation Measures

Environmental impacts of the proposed additional work of 6 over-water units will not be new. Those impacts have already been identified and mitigation measures proposed. But because this work is being done after a long hiatus the impacts need to be reiterated and brought to focus.

The environmental impacts from this proposed work are:

1. **Impacts to bottom substrate:** The deployment of the stilt pads (concrete footings) will result denuding of the benthic life forms in the area and sedimentation. Although limited in area excavation will results in exposing and removal of benthic organism in the area. Some of these are likely going to die but others may move away and re-burrow into the sandy bottom. Surveys showed that sediment in the area is loose and soft and so a slightly larger area my required to be dug to place the footing. Depending on the currents and the duration of sustained activity sediments may last from 3-6 hours. Fortunately, the area is not far from the drop-off and therefore likely to experience the strong long-shore currents the sediments is likely to be
2. **Release of Debris and Littering:** An impact, if not adequately supervised, is accidental release debris and littering. These could arise from construction work or otherwise. Some of these end up as marine litter and may get dispersed to a wide area. However, it should be noted this is considered to be minimal.
3. **Aesthetics:** This is a minor impact and often taken care during the design of the resort. The effect of this often damped through habituation - constant perception of the new feature making it as part of the environment.
4. **Changes in Water Circulation:** There has not been any research on the significance of the obstruction of current flow due to construction of the over-water – the stilts impeding the current flow. But there is anecdotal evidence to suggest that stilts place across large expanse of reef flat may have some impact on longshore drift. However, the addition of six units may change the flow only marginally.
5. **Oil pollution:** Oil pollution may occur depending on the mode of transport of material to the site. However, it is expected that movement of material over the lagoon in engine-vessels will be minimal, as most of the light construction material will be transported on wheel burrow or light carts on the walk-way jetty that has already built for access to the existing bungalows.

Mitigation Measures: Similar to the impacts, the mitigation measures that would be required are the same as have been identified in the EIA report. They are:

1. Limiting the activity of placing concrete footing only to slack tide time and/or shorten the duration of the activity as much as possible. Unlike in the earlier case, it is proposed to use a hatched-barge as a working platform where the excavator will be used to dig and deploy the footings.
2. Have proper scaffolding and nettings underneath during all stages of construction. Proper scaffolding will minimize instance required for getting to into water. It will

also facilitate riggings for the netting, which is required to minimize accidental release of debris causing marine litter.

3. Use the existing walkway, as much as possible, to transport construction material. It is normal practice the construction material is transported to the site on floating pontoons. They are often pushed by people in water, which in the process tramples and creates sedimentation.

7. Environmental Monitoring

Development of Malefushi work started in early 2009. As mentioned earlier about 75-80% of the construction work is complete. Furthermore the work was suspended due to financial issues with the previous investor.

At the Scoping Meeting it was made aware monitoring reports were not forthcoming. With almost 3 years following the development works, it is recommended that to provide a comprehensive monitoring report as soon as possible. This monitoring report is to be submitted within 3 months of issuing the Decision Note for this Addendum to the EIA. It is with this view that Environmental Monitoring programme is reviewed and strengthened in this Addendum. Following environmental monitoring is proposed, but should not be considered as excluding from consideration matters deemed to be significant but not incorporated in them, or matters currently unforeseen, that emerge as important or significant from environmental studies or otherwise during the course of environmental monitoring. It is important that surveys are done on the baselines and results interpreted in relation to baseline data.

Scope	Monitoring Parameters	Monitoring Frequency	Cost [US$]
Shore line	1. Vegetation line 2. low-tide line 3. high tide line 4. Description of erosion/accretion 5. Beach profiles	Immediate (within 3 months of Decision Note of this Addendum); thereafter bi-annually for the first 2 years followed by annual monitoring	1,500.00
Marine Environment	1. Substrate cover on baseline points (areas) 2. Fish census	Immediate (within 3 months of Decision Note of this Addendum); thereafter bi-annually for the first 2 years followed by annual monitoring	1,300.00
Water Quality (Marine and Ground)	1. Nitrates, phosphates 2. pH, salinity 3. Sediment Load 4. COD / BOD	Immediate (within 3 months of Decision Note of this Addendum); followed by annual monitoring in the baseline areas.	500.00

Terrestrial Environment	General description to changes in vegetation	Immediate (within 3 months of Decision Note of this Addendum)	375.00

Proponent Commitment: The development on the Malefushi changed hands before completion of the project proposal. Although the project transfer does not invalidate the EIA commitments during the project development, post-development and operation phase commitments with regards to monitoring, a commitment letter from the new developer (proponent) re-affirming their commitment was sought (Annex 5). The developer is fully aware of regulatory requirement and is fully committed to honor Monitoring Programme that is proposed here.

8. Conclusions

The resort development project on Malefushi Island has been going on since 2009. The project stalled in early 2011 and re-started in 2012. The scope change for which this Addendum is required is for the additional of 6 over-water units to the existing row of the over-water bungalows built on the shallow sandy reef flat south west of the island. The most significant activity that has the potential to cause negative environmental impact is the deployment of pad-foundation (concrete footing) of the stilts on the sandy bottom. Given that total number of deployments will no more than 60 and the work will be restricted to 2-3 weeks, the impacts associated due to sediment re-suspension will be of short duration and negligible. Therefore this scope change will not alter the over-all aspect of the project.

9. References:

Anonymous (2006) Environmental Impact Assessment – Tourist Resort Development on Malefushi Island, Thaa Atoll. July 2006.

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10. Annexes

Annex 1: Approved Terms of Reference of the Scope Change
Annex 2: Architectural drawing of the proposed rooms by IVPL
Annex 3: Results of Water Quality tests
Annex 4: Letter from the Th. Atoll Council confirming the receipt of the report
Annex 5: Letter from the proponent, re-affirming their commitment
Annex 6: The revised and approved Concept Master plan for the Th. Malefushi resort as proposed by the Investment Venture Pvt. Ltd.