

CHAPTER 3

**Environment and Ecology Bureau
Agriculture, Fisheries and
Conservation Department**

Hong Kong UNESCO Global Geopark

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This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

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HONG KONG UNESCO GLOBAL GEOPARK

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HONG KONG UNESCO GLOBAL GEOPARK

Executive Summary

1. A United Nations Educational, Scientific and Cultural Organization (UNESCO) geopark is a single, unified geographical area where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. It uses its geological heritage, in connection with other aspects of an area's natural and cultural heritage, to enhance awareness and understanding of key issues facing society, such as using the earth's resources sustainably, mitigating the effects of climate change and reducing natural disasters-related risks. As announced in the 2008-09 Policy Address, the Government would set up a geopark with a view to better conserving the geological landscapes as well as promoting geoeducation and geoscience popularisation. In 2009, the geopark was established, obtained the national geopark status and became Hong Kong National Geopark of China. In 2011, the geopark was accepted as a member of the Global Geoparks Network (GGN) and was renamed Hong Kong Global Geopark of China. In 2015, with the formalisation of the new "UNESCO Global Geopark" label, the geopark was renamed Hong Kong UNESCO Global Geopark (hereinafter referred to as Hong Kong Geopark). In order to ensure the quality of UNESCO Global Geoparks, the status of each UNESCO Global Geopark is subject to a thorough revalidation every four years. The Agriculture, Fisheries and Conservation Department (AFCD), as the management authority of Hong Kong Geopark, is responsible for all aspects of the implementation of the geopark, including planning, management and visitor services.

2. Hong Kong Geopark is located in the eastern part of Hong Kong with land area of about 150 square kilometres, and comprises two geological regions, namely the Sai Kung Volcanic Rock Region and the Northeast New Territories Sedimentary Rock Region. The main planning principles of Hong Kong Geopark include legal protection of important geological sites under the Country Parks Ordinance (Cap. 208) and the Marine Parks Ordinance (Cap. 476), and orientation to nature conservation, education and sustainable development. As of June 2022, 12 geosites with land-tour routes and 2 boat-tour routes were developed for Hong Kong Geopark and 8 visitor centres were established. According to AFCD, the annual number of visitors to Hong Kong Geopark ranged from about 1.2 million to 1.5 million in 2017 to 2021. In 2021-22, the recurrent expenditure for Hong Kong Geopark was about

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\$29.2 million. The Audit Commission (Audit) has recently conducted a review of Hong Kong Geopark.

Planning and development

3. *Mechanism for identifying geosites for promotion not laid down in guidelines.* Since 2011, AFCD has identified three new geosites with land-tour routes, developed facilities under the “Same Roots, Same Origins” project (launched in 2017 to conserve the cultural heritage of local communities) and made improvements to existing geo-trails. Audit noted that AFCD had not laid down guidelines on the mechanism for identification of such sites (e.g. the criteria for selecting the geosites concerned and approval authority) (paras. 2.9, 2.10 and 2.12).

4. *Some geosites not accessible by regular daily public transport services.* Audit notes that public transport services to some geosites are not available to visitors daily, including: (a) Kau Sai Chau, with travelling requires hiring a boat, using recreational kaito ferry services that are subject to demand or joining a guided tour; (b) Tung Ping Chau, with the regular kaito ferry service between Ma Liu Shui and Tung Ping Chau only available on Saturdays, Sundays and public holidays; and (c) Lai Chi Wo, Kat O and Ap Chau, with the regular kaito ferry services between Ma Liu Shui and these three geosites only available on Saturdays, Sundays and public holidays (from 7 July 2022, a regular kaito ferry service from Sam Mun Tsai to Lai Chi Wo/Kat O/Ap Chau on Tuesdays and Thursdays is provided on a trial basis until 31 December 2022) (para. 2.23).

5. *Need to enhance the accessibility to East Dam.* High Island Reservoir East Dam (hereinafter referred to as East Dam) is one of the most popular geopark attractions of Hong Kong Geopark. The access road to East Dam (i.e. Sai Kung Man Yee Road) is maintained by the Water Supplies Department (WSD) and its access is restricted under the co-management of AFCD and WSD. East Dam can be accessed by green minibus (GMB) directly, franchised buses/other GMB services at Pak Tam Chung, joining tours and taxis (para. 2.26). Audit noted the following issues:

- (a) *GMB service.* Since the introduction of the direct GMB route between Pak Tam Chung and East Dam in July 2018 and up to September 2022, the service was only available on Sundays and public holidays. According to the Transport Department (TD), in view that the passenger demand for the

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GMB route concerned was high, the service would be extended to Saturdays (from 22 October 2022). Audit noted that TD had conducted surveys on the demand of public transport services at East Dam on 22 days in the period from 2020 to 2022 (up to July) in different seasons, but no similar surveys had been conducted on weekdays. Besides, the 20-minute headway of the GMB service on Sundays and public holidays had not been changed since February 2019, and the demand for public transport services at East Dam was affected by seasonal factors (paras. 2.28, 2.29 and 2.37); and

- (b) ***Coach permits.*** With a view to promoting green tourism and facilitating tourists' access to Hong Kong Geopark, the Tourism Commission, in collaboration with the Travel Industry Council of Hong Kong, AFCD and WSD have been taking forward a scheme since June 2012 allowing registered travel agents to apply for coach permits to access East Dam via the restricted Man Yee Road to receive inbound tourists. Since November 2020, the scheme has been extended to travel agents which organise local tours. Audit noted that the number of applications for the coach permits to East Dam was on an increasing trend, and the actual demand might even be greater because AFCD had not maintained information about turning away applicants due to the daily limit of three permits having been exceeded. On the other hand, some permits were not utilised but the reasons were not ascertained (paras. 2.31 and 2.33).

Visitor services

6. ***Need to review methodology in calculating visitor numbers.*** According to AFCD, as the majority of the land area of Hong Kong Geopark overlaps with three country parks (i.e. Sai Kung East, Sai Kung West, and Plover Cove) plus the Tsiu Hang Special Area (the main entrance of which is through Lions Nature Education Centre located there), the corresponding visitor data from these areas would be the most practical source of data for Hong Kong Geopark to approximate the visitor number. After a review of the calculation method in 2018, the total number of visitors to Hong Kong Geopark has been estimated to be 30% of the total number of visitors to the three country park areas plus 100% of that to Lions Nature Education Centre. Audit noted that in calculating the visitor numbers to Hong Kong Geopark, AFCD had not taken into account some new geosites developed after 2018 (e.g. Kau Sai Chau), some sites with a high carrying capacity (e.g. Tung Ping Chau), and the visitor numbers of visitor centres (except for Geopark Visitor Centre located within Lions Nature Education Centre) (paras. 3.5 and 3.6).

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7. ***Need to keep under review patronage to visitor centres.*** As of June 2022, there were eight visitor centres in Hong Kong Geopark. Audit noted that, amid the coronavirus disease (COVID-19) epidemic, the visitor numbers of Volcano Discovery Centre and Geopark Visitor Centre (i.e. the two visitor centres with the largest number of visitors) generally decreased. Besides, the number of visitors to Kau Sai Village Story Room was on the low side, and the lack of regular kaito ferry services might be a reason (paras. 3.4 and 3.9).

8. ***Need to keep under review opening schedule of visitor centres.*** Audit reviewed the opening schedule of visitor centres as of August 2022 and found that they did not match with the availability of public transport to the related geosites, as follows: (a) while regular kaito ferry services from Ma Liu Shui to Ap Chau were available on Saturdays, Sundays and public holidays, Ap Chau Story Room was not open on Saturdays; and (b) from 7 July 2022, while a regular kaito ferry service from Sam Mun Tsai to Lai Chi Wo/Kat O/Ap Chau on Tuesdays and Thursdays was provided on a trial basis until 31 December 2022, the four story rooms at the geosites concerned were not open on the said days (para. 3.12).

9. ***Need to clearly set out service requirements of visitor centres in the midst of COVID-19 epidemic.*** As of June 2022, the operation of six visitor centres was outsourced, including five story rooms and Volcano Discovery Centre. Audit examined the services provided by the operator of Volcano Discovery Centre and noted the following issues (paras. 3.15 and 3.16):

- (a) ***Alternative services not provided in the midst of COVID-19 epidemic.*** From 2019-20 to 2021-22, Volcano Discovery Centre was closed for 9.7 (27%) of the 36 months due to the COVID-19 epidemic. Audit noted that there was no contract clause in the operation contracts to specifically cater for the service provision and the payment mechanism in the midst of COVID-19 epidemic where the required services could not be provided. There was no documentation showing that AFCD had requested the operator to provide alternative services during the closure of the visitor centre and the full contract cost had been paid to the operator for the period (para. 3.17); and
- (b) ***Guided tour services suspended for a long time.*** When Volcano Discovery Centre was open, some services (e.g. guided tours) continued to be suspended, of which some had been suspended for a long time. For

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example, free guided tours at the centre and paid land-based tours had been suspended since mid-July 2020 and not resumed up to August 2022 (para. 3.19).

10. ***Scope for improvement in conducting visitor surveys.*** Audit noted that since March 2016 and up to June 2022, apart from the visitor survey conducted at Volcano Discovery Centre, no visitor survey had been conducted for Hong Kong Geopark. For Volcano Discovery Centre, Audit noted that the annual response rate of the survey was on the low side (ranged from 0.2% to 1.2%) in the period from 2017 to 2022 (up to March), and only one electronic device was available for completion of the visitor survey at the centre. No Quick Response code (QR code) was available for completing the survey online (para. 3.22).

11. ***Scope for improving provision of geopark facilities.*** According to AFCD, the land-based tour routes are designed to be self-guided with on-site interpretation panels, and the signage should be sufficient to present the key geological and ecological heritage attractions along all geo-routes. Audit noted that, as of July 2022, interpretation panels were not available at some observation points in 7 (58%) of the 12 geosites with land-tour routes, and AFCD had not explored alternative means (e.g. QR codes) for providing important information at the key geological and ecological heritage attractions without interpretation panels (para. 3.27).

12. ***Need to properly maintain geopark facilities.*** Audit conducted site visits to seven geosites with land-tour routes and eight visitor centres in the period from April to August 2022 and found that some geopark facilities were not properly maintained (e.g. a multi-language audio guide in a visitor centre was out of service). Besides, Audit examined the records of 16 damaged or worn signs reported in the period from 2020 to 2022 (up to March) and found that the time elapsed from the identification of the damages to the completion of repair or replacement ranged from 4 days to 5 months (averaging 3 months) (para. 3.29).

13. ***Need to enhance provision of geopark information.*** Audit conducted site visits (see para. 12 above), and examined leaflets (displayed at the eight visitor centres and those available on the AFCD's Hong Kong Geopark website (hereinafter referred to as the geopark website)) and geopark information on websites as of July 2022. Audit noted that: (a) some geopark information was outdated or inaccurate (e.g. 26 (25%) of 105 QR codes shown in the leaflets were invalid); and (b) relevant

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and updated leaflets were not always available (e.g. while there were a total of 29 leaflets, the number of leaflets available at the eight visitor centres and on the geopark website varied from 3 to 16 (averaging 10 leaflets)). As of June 2022, no documentation was available showing the criteria in selecting leaflets to be placed at the visitor centres and on the geopark website (para. 3.32).

14. ***Scope for improvement in recruiting and reassessing geopark guides.*** A Geopark Guide System is in place to encourage existing tour guides to build capacity and deepen their knowledge in line with global standards. The system comprises two grades, namely the Recommended Geopark Guide (R2G) and the Accredited Geopark Guide (A2G) (hereinafter collectively referred to as geopark guides) (para. 3.37). Audit noted the following issues:

- (a) ***Scope for improvement in recruiting geopark guides.*** Since the launch of the A2G system in March 2011 and up to March 2022, only one round of recruitment exercise had been conducted in March 2012. Besides, since the launch of the R2G system in June 2010 and up to March 2022, seven rounds of recruitment exercises had been conducted. There was a gap of over five years between the sixth (in September 2015) and the seventh (in January 2021) round (para. 3.39); and
- (b) ***Delay in re-assessment of geopark guides.*** A2Gs and R2Gs are required to be reassessed every three years and two years respectively. Audit noted that there were delays in the re-assessment process. For example, in the 2021 re-assessment of A2Gs, an email for the submission of re-assessment documents and the notification of passing the re-assessment were only issued to the A2Gs concerned 4 to 5 months and 6 to 7 months after the expiry dates of the previous accreditation respectively (para. 3.42).

Other related issues

15. ***Need to strengthen actions in organising educational activities.*** Hong Kong Geopark develops and organises educational activities for all ages to spread awareness of geological heritage and its links to other aspects of natural, cultural and intangible heritages. Audit noted that the number of educational activities organised for Hong Kong Geopark decreased by about 72% from 72 in 2017 to 20 in 2021. According to AFCD, the decrease was mainly due to the COVID-19 epidemic, and for the coming school year from September 2022, it had reviewed the anti-epidemic

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requirements for schools and would provide both face-to-face and online school seminars and talks (paras. 4.2 and 4.4).

16. ***Scope for improving monitoring of geopark partners.*** AFCD works with different partners in promoting Hong Kong Geopark (para. 4.17). Audit noted that:

- (a) ***Geopark hotels.*** There are two geopark hotels in Hong Kong. According to AFCD guidelines, inspections should be conducted at least twice a year to ensure that the operation and partnership arrangements are being followed. However, no documentation was available showing that inspections had been conducted since December 2014 and up to August 2022 (para. 4.18); and
- (b) ***Promotion with geopark partners.*** Two promotional videos, which included promotion of dishes with the names of the restaurants, had been uploaded to the social media account of Hong Kong Geopark in November 2014 and February 2016. These videos were still available for public viewing as of August 2022 but the restaurants concerned were no longer geopark partners. However, there was no disclaimer in the videos or in the posts of the social media account of Hong Kong Geopark stating this fact and that it would not take part in any commercial operation of the restaurants (para. 4.19).

17. ***Need to ensure that geosites are covered by routine patrols/inspections.*** According to AFCD guidelines, the patrol routes of the geopark wardens must cover all geosites of Hong Kong Geopark. Audit noted that two geosites (i.e. Kau Sai Chau and Yim Tin Tsai) were not included in AFCD's patrol plan (revised in August 2018 and July 2022). According to AFCD, while no routine patrols were conducted for geosites such as Kau Sai Chau and Yim Tin Tsai, which were outside the boundary of country parks and marine parks, it would monitor the general site condition simultaneously during inspection of signage or story rooms (para. 4.28).

18. ***Patrols and inspections not conducted according to required frequency.*** Audit examination revealed that: (a) the number of land-based patrols conducted for 6 and 5 geosites in 2020 and 2021 respectively did not meet the required frequency stipulated in the patrol plan, with the shortfall ranging from 4% to 46% (averaging 19%); (b) the number of sea-based patrols conducted for 9 geosites did not meet the

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required frequency in both 2020 and 2021, with the shortfall ranging from 12% to 98% (averaging 69%); and (c) the number of inspection of signage conducted for 5 and 4 geosites in 2020 and 2021 respectively did not meet the required frequency of two inspections per year (i.e. actual frequency was one or nil per year) (para. 4.30).

19. ***Violation of codes and guidelines for visiting geopark.*** Audit conducted site visits to seven geosites with land-tour routes in the period from April to August 2022 and noted behaviours violating the “Code for Visiting Geosites in Hong Kong”, guidelines for visiting geopark and rules shown in warning signs including: (a) getting ashore a geosite classified as a core protection area with no visitor facilities provided; (b) leaving behind litters in geosites; (c) camping at geosites which were not designated campsites; and (d) collecting clams from a geosite (para. 4.33).

20. ***Need to keep under review safety incidents in geosites.*** AFCD does not maintain official statistics on incidents involving injuries or deaths in Hong Kong Geopark. Audit conducted research on media reports published in the period from 2020 to 2022 (up to June) and noted that there were 27 incidents (involving 18 injuries and 12 deaths) in geosites of Hong Kong Geopark. According to AFCD, it had checked the incidents referred by Audit and noted that: (a) 14 (52%) incidents happened outside officially maintained trails/visitation areas of both Hong Kong Geopark and country parks; (b) 10 (37%) incidents were related to heat stroke or the victim’s own body condition; and (c) 3 (11%) incidents happened during water activities (paras. 4.38 and 4.39).

21. ***Scope for improving the provision of safety information to visitors.*** AFCD has included on its Enjoy Hiking website trail difficulty level reference. The high-risk locations with records of fatal and serious accidents in country parks are also included on the Enjoy Hiking website. Audit noted that as of August 2022: (a) the geopark website did not include the list of high-risk locations, the levels of difficulty of trails for hiking, or link to the Enjoy Hiking website for accessing the relevant information; (b) there were inconsistencies between the levels of difficulty of 5 (out of 9) geo-trails stated in a geopark leaflet and those on the Enjoy Hiking website; and (c) while trail distance and hiking time were stated in some of the information boards installed at the geosites, the level of difficulty was not stated in any of the information boards (para. 4.41).

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Audit recommendations

22. Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

Planning and development

- (a) lay down guidelines on the mechanism in selecting geosites for promotion (para. 2.16(a));

Visitor services

- (b) review the methodology in calculating the visitor numbers of Hong Kong Geopark with a view to improving the accuracy of the figures (para. 3.23(a));
- (c) keep under review the number of visitors to visitor centres and the opening schedule of visitor centres (para. 3.23(b) and (c));
- (d) clearly set out the service requirements in the operation contracts of visitor centres in future to cater for situations where the required services cannot be provided in the midst of the COVID-19 epidemic, and take measures to ensure that guided tour services of Volcano Discovery Centre are provided as far as practicable (para. 3.23(d) and (e));
- (e) conduct regular visitor surveys to gauge visitors' feedback on Hong Kong Geopark and make better use of information technology to facilitate the conduct of visitor surveys (para. 3.23(f));
- (f) provide geopark facilities in geosites as required by AFCD guidelines, and explore alternative means to provide important information at key geological and ecological heritage attractions without interpretation panels (para. 3.35(a));

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- (g) **step up efforts in repairing or replacing damaged geopark facilities (para. 3.35(b));**
- (h) **take measures to ensure that the information disseminated in visitor centres, information boards, leaflets and websites is accurate and up-to-date, and set out the criteria for displaying leaflets at visitor centres and on the geopark website in AFCD guidelines (para. 3.35(d)(i) and (e));**
- (i) **take measures to ensure that recruitment exercises and re-assessment of geopark guides are conducted in a timely manner (para. 3.54(b));**

Other related issues

- (j) **strengthen actions in organising educational activities for Hong Kong Geopark (para. 4.11(a));**
- (k) **conduct inspections of the geopark hotels according to the frequency stipulated in the guidelines (para. 4.24(b));**
- (l) **specify clearly the relationships between Hong Kong Geopark and geopark partners in promotional materials and timely update the materials to reflect any changes (para. 4.24(d));**
- (m) **take measures to ensure that all geosites are covered by routine patrols and/or inspections as appropriate, and routine patrols of geosites and inspection of signage are conducted in accordance with the frequency stipulated in the guidelines (para. 4.35(a) and (b));**
- (n) **continue to strengthen actions against inappropriate activities in geosites (para. 4.35(c)); and**
- (o) **keep under review safety incidents in Hong Kong Geopark and enhance the completeness and accuracy of geo-route information to visitors (para. 4.43(a) and (b)).**

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23. **Audit has also *recommended* that:**
- (a) **the Commissioner for Transport should:**
 - (i) **in collaboration with the Director of Agriculture, Fisheries and Conservation, keep under review the provision of public transport services to geosites and enhance the services as necessary (para. 2.34); and**
 - (ii) **in collaboration with the Director of Agriculture, Fisheries and Conservation and the Director of Water Supplies, keep under review the provision of GMB services at East Dam (para. 2.35); and**
 - (b) **the Commissioner for Tourism, in collaboration with the Director of Agriculture, Fisheries and Conservation and the Director of Water Supplies, should conduct a review on the scheme of granting coach permits to East Dam for promoting green tourism (para. 2.36).**

Response from the Government

24. The Director of Agriculture, Fisheries and Conservation, the Commissioner for Transport, the Commissioner for Tourism and the Director of Water Supplies agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to build peace through international cooperation in education, sciences and culture. According to UNESCO, a UNESCO geopark:

- (a) is a single, unified geographical area where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development; and
- (b) uses its geological heritage, in connection with other aspects of an area's natural and cultural heritage, to enhance awareness and understanding of key issues facing society, such as using the earth's resources sustainably, mitigating the effects of climate change and reducing natural disasters-related risks. By raising awareness of the importance of the area's geological heritage in history and society today, the geopark gives local people a sense of pride in their region and strengthen their identification with the area.

1.3 UNESCO's work with geoparks began in 2001. In 2004, the Global Geoparks Network (GGN), whose members are committed to working together and developing models of best practice for global geoparks, was formed. Ever since, the number of geoparks through GGN has grown. In 2015, a new label, the UNESCO Global Geopark, was created for expressing governmental recognition of the importance of managing outstanding geological sites and landscapes in a holistic manner, and providing a new international status to a former network of sites of geological significance. As of June 2022, there were 177 UNESCO Global Geoparks in 46 countries, of which 41 geoparks were located in China.

Development of Hong Kong Geopark

1.4 As announced in the 2008-09 Policy Address, the Government would set up a geopark under the framework of the Country Parks Ordinance (Cap. 208) and the Marine Parks Ordinance (Cap. 476) (Note 1), with a view to better conserving the geological landscapes as well as promoting geoeducation and geoscience popularisation.

1.5 In 2008, the Government commissioned a study to assess the feasibility of establishing a geopark in Hong Kong. The study found that two regions, namely the Northeast New Territories and Sai Kung, were unique and representative in terms of geodiversity, ecology, science popularisation potential and cultural interests, and recommended the setting up of a geopark covering these areas for better protection and management of the geological attractions and promotion of geodiversity, as well as aiming at attaining the national geopark status. The Government endorsed the findings of the study and took actions to set up a geopark covering the proposed areas.

1.6 In 2009, the geopark was established, obtained the national geopark status and became Hong Kong National Geopark of China. In 2011, the geopark was accepted as a member of GGN and was renamed Hong Kong Global Geopark of China. According to the Government, the acceptance into GGN was a recognition of Hong Kong's conservation efforts, and made the geopark an international attraction for local and inbound visitors. In 2015, with the formalisation of the new "UNESCO Global Geopark" label (see para. 1.3), the geopark was renamed Hong Kong UNESCO Global Geopark (hereinafter referred to as Hong Kong Geopark).

Note 1: *The Country Parks Ordinance provides a legal framework for the designation, control and management of country parks and special areas, whereas the Marine Parks Ordinance provides a legal framework for designation, control and management of marine parks and marine reserves. Under the Ordinances, the control and management of country parks, special areas, marine parks and marine reserves are vested in the Country and Marine Parks Authority, who is the Director of Agriculture, Fisheries and Conservation. For simplicity, the Country and Marine Parks Authority is referred to as the Agriculture, Fisheries and Conservation Department in this Audit Report.*

1.7 The Environment and Ecology Bureau (Note 2) is responsible for formulating policies on environmental protection, energy, climate change and sustainable development including those relating to Hong Kong Geopark. The Agriculture, Fisheries and Conservation Department (AFCD), as the management authority of Hong Kong Geopark, is responsible for all aspects of the implementation of the geopark, including planning, management and visitor services. The Country and Marine Parks Board (Note 3) gives advice to AFCD on, among others, strategies for the management and operation of Hong Kong Geopark.

Geographical layout of Hong Kong Geopark

1.8 Hong Kong Geopark is lauded as a unique “Geopark in the City”, with the city centre a mere one-hour bus or car ride away. It is located in the eastern part of Hong Kong, with land area of about 150 square kilometres. Within a single, unified boundary, Hong Kong Geopark comprises two geological regions, namely the Sai Kung Volcanic Rock Region and the Northeast New Territories Sedimentary Rock Region. Figure 1 shows the geographical layout of Hong Kong Geopark.

Note 2: *The Environment and Ecology Bureau was formed in July 2022 to take up, inter alia, the policy matters on nature conservation from the former Environment Bureau.*

Note 3: *The Country and Marine Parks Board is established under the Country Parks Ordinance to advise AFCD on the policy and programmes in respect of country parks and special areas, as well as marine parks and marine reserves. According to the Ordinance, the members of the Board, other than those members who are public officers, shall be appointed for a period of two years or for such lesser period as the Chief Executive of the Hong Kong Special Administrative Region may in any particular case determine and shall be eligible for re-appointment. As of June 2022, the Board comprised a Chairman, 19 non-official members and 9 official members (including the Director of Agriculture, Fisheries and Conservation).*

Figure 1

Geographical layout of Hong Kong Geopark



Source: AFCD records

1.9 The geological characteristics of the two geological regions are as follows:

- (a) ***Sai Kung Volcanic Rock Region.*** The Region contains a wide distribution of hexagonal rock columns of international significance. Major sites include High Island Reservoir East Dam (hereinafter referred to as East Dam) (see Photograph 1), Sharp Island (see Photograph 2), the Ninepin Group, the Ung Kong Group, Tai Long Wan, Kau Sai Chau and Yim Tin Tsai; and

Photograph 1

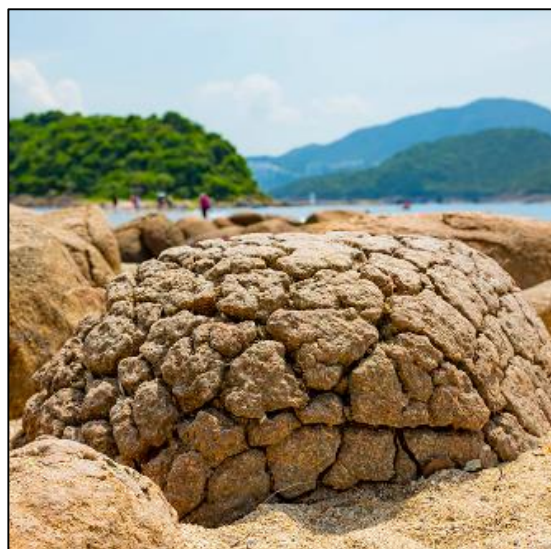
East Dam



Source: AFCD records

Photograph 2

Sharp Island



Source: AFCD records

- (b) ***Northeast New Territories Sedimentary Rock Region.*** The Region displays various sedimentary rocks of up to 400 million years old, showcasing the complete geological history of Hong Kong. Major sites include Tung Ping Chau (see Photograph 3), Lai Chi Chong (see Photograph 4), Bluff Head, Double Haven, Ma Shi Chau, Ap Chau, Kat O, Lai Chi Wo and Port Island.

Photograph 3

Tung Ping Chau



Source: AFCD records

Photograph 4

Lai Chi Chong



Source: AFCD records

Planning and management principles

1.10 The main planning principles of Hong Kong Geopark include the following:

- (a) important geological sites are legally protected under the Country Parks Ordinance and the Marine Parks Ordinance (Note 4); and
- (b) Hong Kong Geopark is oriented to nature conservation, education and sustainable development, and unnecessary facilities that may adversely affect the environment are not allowed.

Note 4: *According to AFCD, the important geological sites in Hong Kong Geopark are within the boundaries of the existing country parks, special areas and marine parks, and hence are under the protection of the Country Parks Ordinance and the Marine Parks Ordinance.*

1.11 The main focus in Hong Kong Geopark is on nature conservation and science popularisation. The geopark is therefore divided into three areas with different levels of protection, as follows:

- (a) ***Integrated protection areas.*** These places have a high carrying capacity. Most visitor facilities are already in place in these geopark areas, or nearby. Thus, in addition to conservation and education, these places can serve recreational purposes. Examples include East Dam, Sharp Island, Tung Ping Chau, Double Haven and Tai Long Wan;
- (b) ***Special protection areas.*** These places already have basic visitor facilities, such as trails, and thus have a medium carrying capacity. Apart from conservation purposes, these places are ideal for education and science popularisation. Examples include Ma Shi Chau and Lai Chi Chong; and
- (c) ***Core protection areas.*** These places have been preserved in their natural state and are very sensitive to human impacts. These places have, therefore, been designated mainly for conservation purposes. Without any infrastructure, such as piers or maintained trails, they have a low carrying capacity and are often dangerous for casual visitors. For conservation and safety reasons, visitors are not encouraged to land on the core protection areas. Instead, boat tours are being promoted at these geosites to address both conservation and safety considerations. Examples include Bluff Head, Port Island, the coastline along Fa Shan of High Island, the Ung Kong Group and the Ninepin Group.

1.12 According to AFCD, starting from 2021, for easier understanding by the public, the following two-tier system has been adopted in classifying geosites for public information (e.g. website):

- (a) ***Sites with higher carrying capacity and provided with visitor facilities.*** These sites are suitable for outings and group visits. Examples include East Dam, Sharp Island, Lai Chi Wo, Kat O and Tung Ping Chau; and
- (b) ***Remote islands and coastlines not provided with visitor facilities.*** These sites are not provided with visitor facilities due to geographical constraints and the need for preservation in their natural state. Visitors should avoid getting ashore and sightseeing is only suitable from a boat on calm summer

days. Examples include Bluff Head, Port Island, coastline along Fa Shan of High Island, the Ung Kong Group and the Ninepin Group.

Management and operation work

1.13 Hong Kong Geopark is managed by AFCD under a holistic concept of protection, education and sustainable development, with the support of local communities and other stakeholders. Such work includes:

- (a) ***Conservation.*** Conservation is one of the important objectives of Hong Kong Geopark. The important geological sites are under the protection of the Country Parks Ordinance and the Marine Parks Ordinance. In addition, the geopark is dedicated to preserving the culture and intangible cultural heritage of the geopark communities, by actively reaching out to them and working with them on different local engagement projects;
- (b) ***Education.*** Educational activities are organised for all ages and local schools to spread awareness of the geological heritage and the geopark's links to other aspects of the natural, cultural and intangible heritages;
- (c) ***Regional sustainable development.*** Hong Kong Geopark has an active role in promoting the linkage of the local culture with the geological heritage and the development of sustainable tourism in order to attain regional sustainable development. The work includes creating or facilitating infrastructure and activities, supporting visitors' access and enhancing interpretation of the geopark and its heritages;
- (d) ***Partnership.*** Partnerships have been developed with local communities and stakeholders to support the sustainable development of the geopark; and
- (e) ***Networking.*** As a member of GGN, Hong Kong Geopark forms partnerships through global and regional geopark networks, and organises different networking activities with other global geoparks.

- 1.14 AFCD's work in the management of Hong Kong Geopark includes:
- (a) setting up and maintenance of visitor facilities such as tour routes and visitor centres;
 - (b) organising education, promotional and publicity activities;
 - (c) promoting participation by local communities and stakeholders in geo-conservation and tourism activities;
 - (d) conducting research and studies on geological science;
 - (e) conducting patrols and enforcement operations;
 - (f) arranging cleaning and litter collection service; and
 - (g) liaising with other government departments for management work under their purview.

Tour routes and visitor centres

1.15 In order to maximise enjoyment of the natural scenery and appreciation of the scientific and cultural value of the sites, as well as to address concerns about visitor safety, tour routes are developed for Hong Kong Geopark. As of June 2022, there were 12 geosites with land-tour routes and 2 boat-tour routes, as follows:

- (a) ***12 geosites with land-tour routes.*** The 12 geosites were East Dam, Sharp Island, Tai Long Wan, Kau Sai Chau, Yim Tin Tsai, Tung Ping Chau, Lai Chi Chong, Ma Shi Chau, Ap Chau, Kat O, Lai Chi Wo and Bride's Pool. The land-based tour routes were designed to be self-guided with on-site interpretation panels; and
- (b) ***2 boat-tour routes.*** There was one boat-tour route for Sai Kung Islands (sites include the Ninepin Group and the Ung Kong Group) and another for Northeast New Territories (sites include Bluff Head, Double Haven and Port Island).

Introduction

A Geopark Guide System has been established for providing high quality tour guides and guided tours for visitors.

1.16 Visitor centres are established in Hong Kong Geopark to facilitate public understanding of the geopark. As of June 2022, there were eight visitor centres, including:

- (a) Volcano Discovery Centre at Sai Kung for science popularisation and visitor services;
- (b) Geopark Visitor Centre within Lions Nature Education Centre at Sai Kung for enabling better understanding of the geological history of Hong Kong and conducting education on geology outside the classroom;
- (c) Tai Po Geoheritage Centre at Tai Po for giving an overview of the history of the Earth and the geological features of Ma Shi Chau and showing the fishermen culture of Sam Mun Tsai Village; and
- (d) five story rooms at Ap Chau, Kat O, Kau Sai Chau and Lai Chi Wo (two story rooms) for exhibiting the culture and history of local communities.

1.17 According to AFCD, the annual number of visitors to Hong Kong Geopark ranged from about 1.2 million to 1.5 million in 2017 to 2021.

Responsible branch

1.18 The Geopark Division under the Country and Marine Parks Branch of AFCD is responsible for the management and operation of Hong Kong Geopark. Various divisions under the Country and Marine Parks Branch are also involved in, among other duties, the work relating to Hong Kong Geopark, including the Country Parks Management Division 1 and the Country Parks Management Division 2 (responsible for the management of trails and collection of litter in geosites in Sai Kung area and Northeast New Territories area), the Country Parks Ranger Services Division 1 and the Country Parks Ranger Services Division 2 (responsible for patrol and law enforcement in geosites in Sai Kung area and Northeast New Territories area)

and the Marine Parks Division (responsible for patrol and law enforcement in geosites in marine areas). An extract of the organisation chart of AFCD (as at 31 March 2022) is at Appendix A.

1.19 According to AFCD, as of March 2022, 24 staff were involved in the management and operation of Hong Kong Geopark. In 2021-22, the recurrent expenditure for Hong Kong Geopark was about \$29.2 million.

Audit review

1.20 In April 2022, the Audit Commission (Audit) commenced a review of Hong Kong Geopark. The audit review has focused on the following areas:

- (a) planning and development (PART 2);
- (b) visitor services (PART 3); and
- (c) other related issues (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.21 The Director of Agriculture, Fisheries and Conservation thanks Audit for conducting the audit review of Hong Kong Geopark and agrees with the audit recommendations. He has said that AFCD is following up the recommendations and has already implemented some of them.

Acknowledgement

1.22 Audit would like to acknowledge with gratitude the full cooperation of the staff of AFCD, the Tourism Commission (TC) and the Transport Department (TD) during the course of the audit review.

PART 2: PLANNING AND DEVELOPMENT

2.1 This PART examines AFCD's work in the planning and development of Hong Kong Geopark, focusing on the following areas:

- (a) maintenance of global geopark status (paras. 2.2 to 2.8);
- (b) planning and development of geosites (paras. 2.9 to 2.17); and
- (c) accessibility of geosites (paras. 2.18 to 2.40).

Maintenance of global geopark status

2.2 In order to ensure the quality of UNESCO Global Geoparks, the status of each UNESCO Global Geopark is subject to a thorough revalidation every four years. The revalidation process includes the following:

- (a) the UNESCO Global Geopark under review has to prepare and submit revalidation documents to UNESCO Secretariat, including a one-page summary, a progress report, a self-evaluation form and a progress evaluation form;
- (b) a field mission will be undertaken by two evaluators from UNESCO to revalidate the quality of the geopark; and
- (c) on the basis of the field evaluation report, UNESCO Global Geoparks Council will decide the period for which the geopark can continue the global geopark status.

2.3 Hong Kong Geopark was accepted as a member of GGN in 2011 and has to be managed in accordance with GGN guidelines and to achieve the objectives for conservation, education, geo-tourism, local sustainable development, publicity and promotion. According to AFCD, to ensure continued eligibility as a global geopark, it carries out work in accordance with GGN guidelines and objectives, and will keep

contributing actively and remain committed to GGN's long-term goals as well as providing better quality services.

Need to make continued efforts in maintaining global geopark status

2.4 Following the acceptance as a GGN member in 2011, Hong Kong Geopark was subject to revalidation over the years and the salient points were as follows:

- (a) in 2015, the global geopark status was renewed for only two years (instead of the usual four years), showing the need for Hong Kong Geopark to improve some of its functions and operations;
- (b) in 2017, the global geopark status was renewed for four years; and
- (c) in 2021, AFCD had submitted the revalidation documents. As of June 2022, the field mission was yet to be undertaken due to the coronavirus disease (COVID-19) epidemic.

2.5 Regarding the maintenance of global geopark status of Hong Kong Geopark, Audit noted the following issues:

- (a) UNESCO made recommendations to Hong Kong Geopark for improvement after each review in 2011, 2015 and 2017 with some having been made repeatedly, including:
 - (i) involvement of local communities and stakeholders in geopark activities (2011, 2015 and 2017);
 - (ii) participation in activities of GGN and regional networks (Note 5) (2015 and 2017); and

Note 5: *There are regional networks under GGN and Hong Kong Geopark is under the Asia Pacific Geoparks Network.*

Planning and development

- (iii) promotion of UNESCO Global Geoparks and regional networks (2015 and 2017);

According to AFCD, it had taken various measures to address the recommendations (e.g. the implementation of the “Same Roots, Same Origins” project — see para. 2.10); and

- (b) as part of the revalidation process, Hong Kong Geopark needs to prepare and submit a self-evaluation form and a progress evaluation form to UNESCO Secretariat. For the progress evaluation form, the self-assessed scores (with maximum scores of 1,000 points) decreased from 955 points in 2015 to 950 points in 2017, and further to 940 points in 2021. The decrease was mainly due to reduced scores in the item “exchange of personnel” under participation in common activities of GGN. Upon enquiry, AFCD informed Audit in September 2022 that exchange of personnel was not feasible since 2020 under the COVID-19 pandemic, and it had endeavoured to upkeep active involvement in GGN activities over the years, such as organising online exchange of the Asia Pacific Geoparks Network (a total of 14 meetings from October 2020 to July 2022) and taking up the role of social media coordinator of the Asia Pacific Geoparks Network.

2.6 In Audit’s view, to maintain the global geopark status of Hong Kong Geopark, AFCD needs to make continued efforts to address the recommendations from UNESCO, taking into account the prevailing prevention and control measures implemented by the Government in light of the epidemic situation.

Audit recommendation

2.7 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should make continued efforts to address the recommendations from UNESCO, taking into account the prevailing prevention and control measures implemented by the Government in light of the epidemic situation.**

Response from the Government

2.8 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendation. He has said that AFCD will endeavour to address the recommendations from UNESCO.

Planning and development of geosites

2.9 Hong Kong Geopark has a clearly defined boundary which is declared in GGN (Note 6). AFCD has identified geosites, which are sites within the boundary of the geopark with geological, ecological and/or cultural value, for promotion with tour routes to visitors. In 2011, when Hong Kong Geopark applied for membership of GGN, there were nine geosites with land-tour routes and two boat-tour routes. Over the years, AFCD has identified a number of new geosites and made improvements to geosites, including:

- (a) identification of three new geosites with land-tour routes (i.e. Kau Sai Chau in 2019, and Yim Tin Tsai and Bride's Pool in 2021). As of June 2022, there were 12 geosites with land-tour routes;
- (b) development of facilities under the "Same Roots, Same Origins" project (see paras. 2.10 and 2.11); and
- (c) improvements to existing geo-trails (e.g. extension of the High Island Geo-trail with a wooden boardwalk to explore a sea cave in 2016 and to a vantage point to see the whole caldera of the ancient supervolcano in 2019).

2.10 **"Same Roots, Same Origins" project.** A UNESCO Global Geopark should conserve not only its geological and ecological heritage, but also the cultural heritage of the geopark communities, including the traditional knowledge, skills and cultural legacy of the indigenous people. In 2017, Hong Kong Geopark launched the "Same Roots, Same Origins" project which aims to support the core principles of UNESCO Global Geoparks by engaging and empowering the local communities, helping them conserve and promote their intangible cultural heritage, and contributing towards their revitalisation and sustainable development.

Note 6: *It is possible for a UNESCO Global Geopark to extend or reduce its area. All extensions will follow similar procedures for endorsement as a new nomination.*

Planning and development

2.11 There are many communities and villages within Hong Kong Geopark. Most of them experienced a sharp population decline in 1960s and 70s after the villagers had moved to the urban area or emigrated overseas. Nowadays, many of the communities are almost deserted, with only a few elderly villagers remaining. Under the “Same Roots, Same Origins” project, AFCD has approached the local communities in Hong Kong Geopark to discover their history, culture, heritage and stories, and recorded and transferred the information into story rooms, heritage trails and publications to promote and conserve their heritage. The project activities include collection, restoration and preservation (e.g. old photographs), rediscovering and conserving culture, history and stories (e.g. desktop research, interviewing local and overseas villagers), and capacity building in the communities (e.g. training, exchange visits and sharing, and local engagement projects). The progress of the project was as follows:

- (a) five story rooms (see para. 1.16(d) — see Photographs 5(a) and (b) for an example) were set up in the period from 2018 to 2021;
- (b) the Kat O Heritage Trail was established in 2021;
- (c) two books about Ap Chau (2019) and Kat O (2020) were published; and
- (d) as of June 2022, the Hing Chun Alliance Heritage Trail and Leung Shuen Wan geosite were under planning.

Photographs 5(a) and (b)

Ap Chau Story Room

(a)



(b)



Source: Photographs taken by Audit staff in July 2022

***Mechanism for identifying geosites for promotion
not laid down in guidelines***

2.12 As mentioned in paragraph 2.9, AFCD has identified new geosites with land-tour routes, developed facilities under the “Same Roots, Same Origins” project and made improvements to geosites of Hong Kong Geopark over the years. Audit noted that AFCD had not laid down guidelines on the mechanism for identification of such sites (e.g. the criteria for selecting the geosites concerned and approval authority). Upon enquiry, AFCD informed Audit in August to October 2022 that:

- (a) while there was no formal, documented mechanism of promoting new geosites, they were identified based on a general logical process, taking into consideration all aspects of a site including value (e.g. the presence of geological, ecological or cultural heritage and its uniqueness and significance), attractiveness to visitors, accessibility, safety, existing facilities and the willingness of the local community to be promoted;

Planning and development

- (b) geosites of geological and ecological value were mostly identified during the establishment of the geopark as a result of comprehensive studies, while new geosites of cultural value had been and would be promoted under the “Same Roots, Same Origins” project;
- (c) addition of a minor geosite would be discussed and decided within the Geopark Division while any major strategic plan or significant new geosite would be put forward to the senior management for agreement, and endorsement from the Country and Marine Parks Board would be sought as appropriate. The strategic plan of identifying new sites and enhancement of existing sites under the “Same Roots, Same Origins” project and the sites involved (Ap Chau, Kat O, seven villages of Hing Chun Alliance (including Lai Chi Wo) and Kau Sai Chau) were presented and endorsed by the Country and Marine Parks Board in October 2019; and
- (d) for the three newly developed geosites with land-tour routes (see para. 2.9(a)):
 - (i) in 2019, the geosite of Kau Sai Chau was developed under the “Same Roots, Same Origins” project; and
 - (ii) in 2021, the geosites and routes were reviewed when AFCD’s Hong Kong Geopark website (hereinafter referred to as the geopark website) was revamped. The geosites of Yim Tin Tsai and Bride’s Pool were added based on their rich cultural and geological heritages respectively.

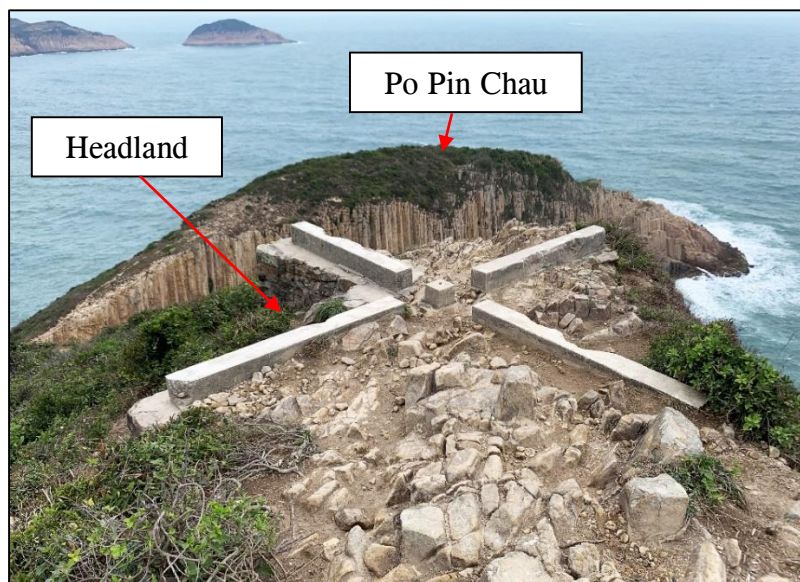
2.13 Audit also noted that no documentation was available showing the assessment of the three geosites (see para. 2.12(d)) against the criteria mentioned in paragraph 2.12(a). To ensure that a consistent practice is adopted and to enhance transparency, AFCD needs to lay down guidelines on the mechanism in selecting geosites for promotion and maintain proper documentation on the reasons for selecting the geosites.

***Need to explore measures to enhance visitor safety
before completion of enhancement works to hiking trail***

2.14 According to AFCD, currently there are some indistinct and seasonally overgrown trails from the MacLehose Trail Section 1 near East Dam to an adjacent headland overlooking Po Pin Chau (see Photograph 6). With increased popularity of this route, human disturbance to the vegetation and soil erosion are observed around the headland. AFCD has planned to set up a new viewing platform on the headland and associated hiking facilities along the trail near East Dam in Hong Kong Geopark to promote the sustainability of hiking activities in these areas.

Photograph 6

Headland overlooking Po Pin Chau



Source: AFCD records

2.15 AFCD, in collaboration with the Architectural Services Department (ArchSD), launched a design competition in June 2021 for the enhancement works and announced the results in September 2021. Upon enquiry, AFCD and ArchSD informed Audit in September 2022 that they were reviewing the design ideas and concepts of the champion entry with respect to the site conditions, technical feasibility and cost effectiveness, and the expected completion date of the enhancement works would be around mid-2024 tentatively. In Audit's view, AFCD needs to explore measures to enhance the safety of visitors before the completion of the enhancement works.

Audit recommendations

2.16 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **lay down guidelines on the mechanism in selecting geosites for promotion and maintain proper documentation on the reasons for selecting the geosites; and**
- (b) **explore measures to enhance the safety of visitors before the completion of the enhancement works to the hiking trail near East Dam to the vantage point overlooking Po Pin Chau.**

Response from the Government

2.17 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that:

- (a) AFCD will draw up guidelines for the selection of geosites for promotion and maintain proper documentation of the reasons for the selections; and
- (b) as regards the enhancement works to the hiking trail near East Dam to the vantage point overlooking Po Pin Chau, AFCD will install warning signs near cliffs and steep slopes so as to alert visitors for possible danger, thereby ensuring their safety.

Accessibility of geosites

2.18 Many geosites and communities in Hong Kong Geopark are in the remote countryside, and some of which are not always accessible by public transport. According to AFCD, it has enhanced the accessibility of geosites by maintaining communication with relevant government departments and public transport service providers. The accessibility to Hong Kong Geopark is improved taking into account the capacity of specific geosites and the need for sustainable socio-economic development.

2.19 According to TD, it has all along been monitoring the travelling demand to tourist attraction sites in the territory (including the geosites in Hong Kong Geopark) and arranges appropriate public transport services taking into account the accessibility and geographic condition of the sites as well as the travelling pattern of the travellers. To facilitate travellers visiting the geosites, various modes of public transport services have been provided, including franchised bus, green minibuses (GMBs), taxi and kaito ferry services where feasible. As the travellers' demand to the geosites is recreational in nature, the relevant public transport operators would arrange additional resources (e.g. franchised buses, GMBs, vessels) during weekends/public holidays and to operate additional trips to cope with upsurge in demand. TD also keeps an overview of the situation and works with the relevant operators on service enhancement proposals as necessary.

2.20 As reported in the revalidation documents submitted to UNESCO by AFCD in 2021, major public transport service enhancements to the accessibility of Hong Kong Geopark in recent years include:

- (a) introducing a new GMB route to East Dam (2018);
- (b) launching a new kaito ferry service to Kat O and Ap Chau (2018); and
- (c) introducing a kaito ferry service to Lai Chi Wo on Saturdays (2020).

2.21 According to TD, in addition to those mentioned in paragraph 2.20, major public transport service enhancements also include:

- (a) extending a franchised bus service from Bride's Pool to Wu Kau Tang for hiking to Lai Chi Wo (Note 7) (2020); and
- (b) enhancing the franchised bus services with stopping points at Pak Tam Chung and Pak Tam Au for hiking to East Dam and Tai Long Wan

Note 7: *Hikers need to walk about 8 kilometres from the nearest bus stop to Lai Chi Wo.*

respectively (Note 8) by introducing services on Saturdays, and extending the service hours on Sundays and public holidays (2020 and 2021).

Some geosites not accessible by regular daily public transport services

2.22 According to TD, to facilitate travellers visiting the 12 geosites with land-tour routes, various modes of public transport services have been provided, as follows:

- (a) for the four geosites that are accessible through road based public transport network (i.e. East Dam, Tai Long Wan, Ma Shi Chau and Bride's Pool), public transport services including franchised bus, GMB and taxi are available to serve travellers; and
- (b) for the remaining eight geosites with piers in the vicinity (i.e. Sharp Island, Kau Sai Chau, Yim Tin Tsai, Tung Ping Chau, Lai Chi Chong, Lai Chi Wo, Kat O and Ap Chau), regular kaito ferry services and recreational kaito ferry services (Note 9) that operate subject to demand are available to serve travellers. For Lai Chi Chong and Lai Chi Wo, hikers can also take franchised buses/GMBs and get off at Pak Sha O for hiking to Lai Chi Chong, or Wu Kau Tang/Luk Keng for hiking to Lai Chi Wo (Note 10).

2.23 Audit notes that public transport services to some geosites are not available to visitors daily, including:

- (a) ***Kau Sai Chau.*** Travelling to Kau Sai Chau requires hiring a boat, using recreational kaito ferry services that are subject to demand (41 routes with

Note 8: *Hikers need to walk about 9 kilometres and 6 kilometres from the nearest bus stop to East Dam and Tai Long Wan respectively.*

Note 9: *Recreational kaito ferry services are mainly intended for tourism or recreational purposes. Their operations are subject to demand in general and on a relatively small scale. In general, kaito ferry service operators may adjust their service frequencies and fares on their own initiative in the light of demand.*

Note 10: *Hikers need to walk about 3.5 kilometres and 8 kilometres from the nearest bus/GMB stop to Lai Chi Chong and Lai Chi Wo respectively.*

kaito vessels registered for the services as of July 2022) or joining a guided tour;

- (b) ***Tung Ping Chau.*** The regular kaito ferry service between Ma Liu Shui and Tung Ping Chau is only available on Saturdays, Sundays and public holidays; and
- (c) ***Lai Chi Wo, Kat O and Ap Chau.*** The regular kaito ferry services between Ma Liu Shui and these three geosites are only available on Saturdays, Sundays and public holidays (Note 11). From 7 July 2022, a regular kaito ferry service from Sam Mun Tsai to Lai Chi Wo/Kat O/Ap Chau on Tuesdays and Thursdays is provided on a trial basis until 31 December 2022.

2.24 In August and September 2022, TD informed Audit of the results for the surveys conducted in the period from 2020 to 2022 (up to July) on the assessment of public transport services for geosites, as follows:

- (a) ***Kau Sai Chau.*** Surveys had been conducted on 6 and 10 February 2022 (Sunday and Thursday), 9 and nil ferry passengers were observed respectively. The service was considered adequate;
- (b) ***Tung Ping Chau.*** Surveys had been conducted on 13 days (Saturdays, Sundays and public holidays in different seasons). According to the survey results, the kaito ferry operator provided additional trips subject to the passenger demand, with average occupancies on a survey day ranged from 40% to 92%, and no passenger was left behind. The service was considered adequate; and
- (c) ***Lai Chi Wo, Kat O and Ap Chau.*** For the kaito ferry services between Ma Liu Shui and Lai Chi Wo, surveys had been conducted on 3 October 2021 (Sunday) and 9 May 2022 (public holiday), and no passenger left-behind was observed for the trips. For the kaito ferry services between Ma Liu Shui and Kat O/Ap Chau, surveys had been

Note 11: *There are daily kaito ferry services between Sha Tau Kok and Kat O and Ap Chau, but access to Sha Tau Kok requires Closed Area Permits. Besides, hikers may walk about 8 kilometres from the nearest bus/GMB stop to Lai Chi Wo.*

conducted on 3 October 2021 (Sunday), 13 February 2022 (Sunday) and 9 May 2022 (public holiday). For the trips to Kat O/Ap Chau on 9 May 2022, 50 passengers were left behind at Ma Liu Shui, and the operator deployed a spare vessel to pick up the left-behind passengers and deployed a vessel with a greater carrying capacity for the return trip. TD would keep in view of the travellers' demand to/from Lai Chi Wo, Kat O and Ap Chau and work with the kaito operator for service enhancement as necessary.

2.25 According to AFCD, the accessibility to Hong Kong Geopark is determined taking into account the capacity of specific geosites and the need for sustainable socio-economic development (see para. 2.18). In Audit's view, TD needs to, in collaboration with AFCD, keep under review the provision of public transport services to geosites and enhance the services as necessary.

Need to enhance the accessibility to East Dam

2.26 East Dam is one of the most popular geopark attractions of Hong Kong Geopark. During construction of the reservoir, stone was quarried from the cliffs around East Dam. The excavation work revealed globally rare rhyolitic volcanic hexagonal rock columns and the site became the best spot to see this geological attraction at close range. The access road to East Dam (i.e. Sai Kung Man Yee Road) is maintained by the Water Supplies Department (WSD) and its access is restricted under the co-management of AFCD and WSD. East Dam can be accessed by GMB directly (the service between Pak Tam Chung and East Dam was available on Sundays and public holidays as of September 2022), franchised buses/other GMB services at Pak Tam Chung (need to walk about 9 kilometres from the nearest bus/GMB stop), joining tours (Note 12) and taxis.

2.27 According to AFCD, following a review in 2020, East Dam has been changed from a "special protection area" (i.e. with medium carrying capacity) to an "integrated protection area" (i.e. with high carrying capacity). Audit noted that there

Note 12: *A visitor may book the guided tour to East Dam at Volcano Discovery Centre (see para. 3.16(a)(ii)).*

was scope for improvement in the provision of the direct GMB service to East Dam (see paras. 2.28 to 2.30) and the coach permit arrangements (see paras. 2.31 to 2.33).

2.28 GMB service. Since the introduction of the direct GMB route between Pak Tam Chung and East Dam in July 2018 and up to September 2022, the service was only available on Sundays and public holidays with service hours having been enhanced twice (Note 13). Upon enquiry, TD informed Audit in August and September 2022 that:

- (a) surveys had been conducted on the demand of public transport services at East Dam on 22 days (Saturdays, Sundays and public holidays in different seasons) in the period from 2020 to 2022 (up to July). The results were as follows:
 - (i) for the surveys conducted on Saturdays (8 days) on taxi services, the number of trips on a survey day ranged from 17 to 521 trips with 21 to 1,002 passengers picked up and 16 to 870 passengers set down; and
 - (ii) for the surveys conducted on Sundays and public holidays on GMB and/or taxi services (14 days), the passenger demand for GMB service was keen. During the hiking season, the average occupancy of a GMB on a survey day was over 80%, and exceptional high demand (with over 100 passengers left behind) was recorded on a few occasions. For the non-hiking season, the average occupancy on a survey day ranged from 55% to 80%. Besides, on a survey day, 54 to 677 taxi trips were observed with 97 to 1,134 passengers picked up and 58 to 1,331 passengers set down;

Note 13: *When the new GMB route was introduced in July 2018, it operated from 3 pm to 6 pm on Sundays and public holidays at a headway of 20 to 25 minutes. In February 2019, the service hours were extended to 7 pm at a headway of 20 minutes. In October 2021, the service was extended to the morning session, with the departure time from Pak Tam Chung from 9:30 am to 6:40 pm, and from East Dam from 10 am to 7 pm (the service hours between January and April 2022 were temporarily ended earlier by 30 minutes owing to the shorter daylight period for traffic safety reason).*

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- (b) the GMB operator concerned strengthened the service to cope with the demand on Sundays and public holidays to provide additional trips with actual headway ranging from 7 to 18 minutes on the survey days during the hiking season; and
- (c) in view that the passenger demand for the GMB route concerned was high, TD had discussed with the operator to extend the service to Saturdays. TD was consulting locals and taxi trade of the proposed service enhancement, and subject to the comments received, it was targeted to implement the service enhancement in October 2022.

2.29 Audit noted that:

- (a) TD had conducted surveys on the demand of public transport services at East Dam on 22 days (Saturdays, Sundays and public holidays in different seasons) in the period from 2020 to 2022 (up to July) (see para. 2.28(a)). However, no similar surveys had been conducted on weekdays;
- (b) the 20-minute headway of the GMB service on Sundays and public holidays had not been changed since February 2019. For example, according to the latest survey conducted on 10 July 2022 (Sunday), while the GMB service was offered at about 20-minute headway, 12 to 42 passengers were left behind and 139 taxi trips were observed; and
- (c) the demand for public transport services at East Dam was affected by seasonal factors. For example, according to the survey results, 456 taxi trips were observed (with 810 passengers picked up and 870 passengers set down) on 20 November 2021 (Saturday) while only 138 taxi trips were observed (with 208 passengers picked up and 267 passengers set down) on 9 July 2022 (Saturday).

2.30 According to AFCD, while the number of inbound visitors to Hong Kong Geopark has reduced because of the COVID-19 pandemic, the number of local visitors has increased. East Dam is one of the most popular geopark attractions and has been classified as an “integrated protection area” since 2020. In Audit’s view, TD needs to, in collaboration with AFCD and WSD, keep under review the provision of GMB services at East Dam, taking into account the service demand and seasonal factors,

and with due regard to nature conservation, impact on waterworks and water quality, traffic capacity and road safety.

2.31 ***Coach permits.*** Visitors may join tours to East Dam. With a view to promoting green tourism in line with the principles of nature conservation and sustainable development, and facilitating tourists' access to Hong Kong Geopark, TC, in collaboration with the Travel Industry Council of Hong Kong (TIC), AFCD and WSD have been taking forward a scheme since June 2012 allowing registered travel agents to apply for coach permits to access East Dam via the restricted Man Yee Road to receive inbound tourists. To tie in with the implementation of the "Green Lifestyle Local Tour Incentive Scheme", special measures have been implemented since November 2020 to extend the scheme to travel agents which organise local tours for applying for coach permits to access East Dam. The permits are co-issued by AFCD and WSD, with a maximum of three permits per day (Note 14) (for Mondays to Fridays excluding public holidays).

2.32 Table 1 shows the number of coach permits to East Dam applied in the period from January 2020 to June 2022 and the utilisation situation. Audit noted that:

- (a) ***Increasing number of applications.*** Since the scheme was extended to travel agents hosting local tours in November 2020, the number of applications for coach permits to East Dam increased (Note 15) by 127% from 59 (comprising 1 application for inbound tour and 58 applications for local tours) in 2020 to 134 (all for local tours) in 2021. In 2022 (up to June), there were 117 applications for local tours. According to AFCD, some applicants might enquire about availability of permits before submitting applications, and would not submit applications if the limit had already been exceeded on a particular day. However, AFCD had not maintained such information. Audit noted that from January to June 2022,

Note 14: *According to AFCD, there is a daily quota of 30 coach permits (including the three permits to East Dam) to facilitate group visits of schools, organisations and tours hosted by travel agents to Sai Kung East Country Park and Sai Kung West Country Park via the Pak Tam Chung Barrier Gate.*

Note 15: *The numbers of applications (all for inbound tours) in 2017, 2018 and 2019 were 8, 9 and 2 respectively.*

Planning and development

the number of days available for application of coach permits was 52 days (Note 16), and all three coach permits were issued on 22 (42%) days; and

- (b) ***Some permits not utilised.*** From January 2020 to June 2022, 78 (38%) of the 206 permits issued were unutilised. According to AFCD, it was likely due to insufficient number of participants received by the travel agents. However, no documentation was available showing that AFCD had ascertained from the applicants about the reasons for not utilising the permits.

Table 1

**Application for coach permits to East Dam
(January 2020 to June 2022)**

	2020	2021	2022 (up to June)	Overall
No. of applications received (a)	59	134	117	310
No. of applications approved (b) (% approved) (c)=(b)÷(a)×100%	20 (34%)	76 (57%)	110 (94%)	206 (66%)
No. of applications rejected/cancelled (d) (% rejected/cancelled) (e)=(d)÷(a)×100%	39 (66%)	58 (43%)	7 (6%)	104 (34%)
No. of permits utilised (f) (% utilised) (g)=(f)÷(b)×100%	0 (0%)	63 (83%)	65 (59%)	128 (62%)
No. of unutilised permits (h) (% unutilised) (i)=(h)÷(b)×100%	20 (100%)	13 (17%)	45 (41%)	78 (38%)

Source: Audit analysis of AFCD records

Remarks: One permit was issued for each application.

Note 16: *Amid the COVID-19 epidemic, local group tours were suspended from 7 January to 20 April 2022. For the 6-month period from January to June 2022, excluding the period when local group tours were suspended, the total number of days for Mondays to Fridays (excluding public holidays) available for application of coach permits to East Dam was 52 days.*

2.33 Audit noted that the number of applications for the coach permits to East Dam was on an increasing trend, and the actual demand might even be greater than the number shown in Table 1 because AFCD had not maintained information about turning away applicants due to the daily limit of three permits having been exceeded (see para. 2.32(a)). On the other hand, some permits were not utilised but the reasons were not ascertained (see para. 2.32(b)). While East Dam has been classified as an “integrated protection area” since 2020, as of August 2022, the limit of three permits per day had not changed since the launch of the scheme in 2012. In Audit’s view, TC needs to, in collaboration with AFCD and WSD, conduct a review on the scheme of granting coach permits to East Dam (including the maximum number of permits, reasons for not utilising the permits and facilitation measures for utilising the permits) for promoting green tourism, with due regard to nature conservation, impact on waterworks and water quality, traffic capacity, road safety and demand for permits.

Audit recommendations

2.34 Audit has *recommended* that the Commissioner for Transport, in collaboration with the Director of Agriculture, Fisheries and Conservation, should keep under review the provision of public transport services to geosites and enhance the services as necessary.

2.35 Audit has also *recommended* that the Commissioner for Transport, in collaboration with the Director of Agriculture, Fisheries and Conservation and the Director of Water Supplies, should keep under review the provision of GMB services at East Dam, taking into account the service demand and seasonal factors, and with due regard to nature conservation, impact on waterworks and water quality, traffic capacity and road safety.

2.36 Audit has also *recommended* that the Commissioner for Tourism, in collaboration with the Director of Agriculture, Fisheries and Conservation and the Director of Water Supplies, should conduct a review on the scheme of granting coach permits to East Dam (including the maximum number of permits, reasons for not utilising the permits and facilitation measures for utilising the permits) for promoting green tourism, with due regard to nature conservation, impact on waterworks and water quality, traffic capacity, road safety and demand for permits.

Response from the Government

2.37 The Commissioner for Transport agrees with the audit recommendations in paragraphs 2.34 and 2.35. She has said that:

- (a) TD will, in collaboration with AFCD, keep under review the provision of public transport services to geosites and enhance the services as necessary; and
- (b) TD has just completed a review with relevant departments, transport trades/operators and the locals. The GMB service between Pak Tam Chung and East Dam, which was provided on Sundays and public holidays, has been extended to Saturdays with effect from 22 October 2022. TD will, in collaboration with AFCD and WSD, continue to review the GMB service at East Dam, taking into account the service demand and seasonal factors, and with due regard to nature conservation, impact on waterworks and water quality, traffic capacity and road safety.

2.38 The Commissioner for Tourism agrees with the audit recommendation in paragraph 2.36. She has said that TC will work closely with AFCD, WSD and TIC to conduct a review on the scheme of granting coach permits to East Dam with a view to promoting green tourism, with due regard to nature conservation, impact on waterworks and water quality, traffic capacity, road safety and demand for permits.

2.39 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations in paragraphs 2.34 to 2.36. He has said that regarding the recommendation in paragraph 2.34, priority will be given to enhancing public transport services to geosites during weekends and public holidays, when visitor demand is at its highest.

2.40 The Director of Water Supplies agrees with the audit recommendations in paragraphs 2.35 and 2.36.

PART 3: VISITOR SERVICES

3.1 This PART examines the visitor services of Hong Kong Geopark, focusing on the following areas:

- (a) visitors' patronage and operation of visitor centres (paras. 3.2 to 3.24);
- (b) provision of geopark facilities and information (paras. 3.25 to 3.36); and
- (c) Geopark Guide System (paras. 3.37 to 3.55).

Visitors' patronage and operation of visitor centres

3.2 According to the study conducted in 2008 for assessing the feasibility of establishing a geopark in Hong Kong (see para. 1.5):

- (a) tourism, which is based on the principles of sustainability, is central to a geopark; and
- (b) there needs to be monitoring over the number of visitors and visitor impact to ensure that the sites being visited are not damaged by the pressure of unsustainable visitor numbers.

3.3 According to AFCD, the annual number of visitors to Hong Kong Geopark ranged from about 1.2 million to 1.5 million in 2017 to 2021.

3.4 **Visitor centres.** According to AFCD, visitor centres are the most informative and important education facilities in the geopark. As of June 2022, there were eight visitor centres in Hong Kong Geopark, which could be categorised into two types according to their main functions, as follows:

- (a) **Core visitor centres.** These centres are set up in major gateways to Hong Kong Geopark (i.e. Sai Kung and Sam Mun Tsai of Tai Po) and provide services such as introduction of Hong Kong Geopark, UNESCO Global

Geoparks, geology of Hong Kong, visitor information and guided tours. These centres include Volcano Discovery Centre, Geopark Visitor Centre (within Lions Nature Education Centre) and Tai Po Geoheritage Centre; and

- (b) ***Story rooms.*** Story rooms are established in cooperation with the local community and other partners, as a way to engage the local community, to promote and conserve their culture and heritage, and ultimately to benefit them and hopefully facilitate their sustainable development (e.g. through sustainable tourism). As of June 2022, five story rooms were set up (see para. 1.16(d)).

Of the 8 visitor centres, 6 were operated by supporting partners and local communities under contracts awarded by open tender or quotation (Note 17).

Need to review methodology in calculating visitor numbers

3.5 Hong Kong Geopark is open to the public 24 hours a day and 7 days a week. According to AFCD:

- (a) as visitors can enter and exit freely at virtually any point along the boundary of Hong Kong Geopark, the calculation of the exact number of visitors is difficult. The situation is very similar to that of the country parks, for which a method has long been established to estimate the monthly visitor figure by manual counting at preset locations and projection based on the collected data;

Note 17: *According to AFCD:*

- (a) *for the 6 visitor centres with the operation outsourced (i.e. Volcano Discovery Centre and the five story rooms), the total contract cost for 2021-22 was about \$2.6 million; and*
- (b) *for the remaining 2 visitor centres, Geopark Visitor Centre was operated by AFCD staff, and Tai Po Geoheritage Centre was operated and funded by a non-governmental organisation.*

- (b) as the majority of the land area of Hong Kong Geopark overlaps with three country parks (i.e. Sai Kung East, Sai Kung West, and Plover Cove) plus the Tsiu Hang Special Area (the main entrance of which is through Lions Nature Education Centre located there), the corresponding visitor data from these areas would be the most practical source of data for Hong Kong Geopark to approximate the visitor number;
- (c) prior to 2018, the total number of visitors to Hong Kong Geopark was estimated to be 30% of the total number of visitors to the three country parks and Lions Nature Education Centre. The 30% approximation is based on a rough estimation that the total land area of major geo-areas is 30% of the total land area of all country parks and special areas that coincides with the geopark boundary; and
- (d) after a review of the calculation method in 2018, it was considered that a 30% approximation of the visitor number to Lions Nature Education Centre was not necessary as the entire Centre was within the geopark boundary. Accordingly, the total number of visitors to Hong Kong Geopark has been revised to be 30% of the total number of visitors to the three country park areas plus 100% of that to Lions Nature Education Centre.

3.6 Audit noted that in calculating the visitor numbers to Hong Kong Geopark, the following factors had not been taken into account:

- (a) ***Geosites located outside the three country parks.*** Three new geosites with land-tour routes (i.e. Kau Sai Chau in 2019, and Yim Tin Tsai and Bride's Pool in 2021) were developed after 2018 (see para. 2.9(a)). Apart from Bride's Pool which was located within the Plover Cove Country Park and hence included in calculating the visitor number of Hong Kong Geopark (see para. 3.5(b)), the other two geosites were not. Furthermore, some sites with a high carrying capacity (e.g. Tung Ping Chau and Sharp Island — Note 18) were also not included; and

Note 18: *According to AFCD:*

- (a) *the number of kaito ferry passengers for Tung Ping Chau in 2021 was 117,409; and*
- (b) *the number of ferry passengers for Sharp Island was not available as there was no regular kaito ferry services to Sharp Island.*

- (b) *Visitor centres.* Except for Geopark Visitor Centre located within Lions Nature Education Centre, the visitor numbers of other visitor centres were not taken into account (e.g. Volcano Discovery Centre which had the second highest number of visitors — see Table 2 in para. 3.8).

3.7 In Audit's view, to facilitate the planning and development work, AFCD needs to review the methodology in calculating the visitor numbers of Hong Kong Geopark, taking into account relevant factors (e.g. newly developed geosites, geosites being excluded and visitor numbers for visitor centres) with a view to improving the accuracy of the figures.

Need to keep under review patronage to visitor centres

3.8 Table 2 shows the visitor numbers for the eight visitor centres from January 2017 to May 2022.

Table 2

**Visitor numbers for eight visitor centres
(January 2017 to May 2022)**

Visitor centre		No. of visitors					
		2017	2018	2019	2020	2021	2022 (up to May)
1	Volcano Discovery Centre	161,494	136,869	120,614	56,937	82,184	9,627
2	Geopark Visitor Centre (Note 1)	390,848	360,280	325,420	243,328	267,024	95,376
3	Tai Po Geoheritage Centre	5,755	6,077	4,315	1,427	— (Note 2)	349
4	Ap Chau Story Room	(Note 3)	12,792	13,836	12,026	20,650	3,370
5	Kau Sai Village Story Room	(Note 3)		820	672	1,324	147
6	Kat O Story Room	(Note 3)		4,493	19,365	35,075	6,204
7	Siu Ying Story Room	(Note 3)				11,264	2,246
8	Lai Chi Wo Story Room	(Note 3)				515	1,396

Source: AFCD records

Note 1: According to AFCD: (a) Geopark Visitor Centre is within Lions Nature Education Centre; and (b) the number of visitors represented that to Lions Nature Education Centre as no separate visitor data was collected for visiting Geopark Visitor Centre.

Note 2: Tai Po Geoheritage Centre was closed from 15 July 2020 to 13 May 2022 for maintenance.

Note 3: Ap Chau Story Room, Kau Sai Village Story Room, Kat O Story Room, Siu Ying Story Room and Lai Chi Wo Story Room were open on 8 April 2018, 1 October 2019, 6 October 2019, 18 February 2021 and 26 December 2021 respectively.

3.9 As shown in Table 2:

- (a) amid the COVID-19 epidemic, the visitor numbers of Volcano Discovery Centre and Geopark Visitor Centre (i.e. the two visitor centres with the largest number of visitors) generally decreased. According to AFCD, all visitor centres were temporarily closed during the epidemic for 166 days, 46 days and 102 days in 2020, 2021 and 2022 (up to May) respectively; and

- (b) the number of visitors to Kau Sai Village Story Room was on the low side when compared with other visitor centres. For example, while both Kau Sai Village Story Room and Ap Chau Story Room opened on Sundays and public holidays, their numbers of visitors in 2021 were 1,324 and 20,650 respectively (Note 19). In this connection, Audit noted that travelling to Kau Sai Chau required the hiring of a boat, using recreational kaito ferry services or joining a guided tour (see para. 2.23(a)). The lack of regular kaito ferry services might be a reason for the lower number of visitors.

3.10 In Audit's view, AFCD needs to keep under review the number of visitors to visitor centres and take actions to improve the patronage of the visitor centres.

Need to keep under review opening schedule of visitor centres

3.11 According to AFCD, the opening schedule of visitor centres is determined by a number of factors, including accessibility, expected number of visitors and availability of villager operators. The opening schedule of the eight visitor centres is as follows:

- (a) Volcano Discovery Centre opens every day;
- (b) Geopark Visitor Centre opens every day except Tuesdays;
- (c) Tai Po Geoheritage Centre, Kat O Story Room, Lai Chi Wo Story Room and Siu Ying Story Room open on Saturdays, Sundays and public holidays; and
- (d) Ap Chau Story Room and Kau Sai Village Story Room open on Sundays and public holidays.

Note 19: *In 2021:*

- (a) *both story rooms were closed from 1 January to 17 February 2021 due to the COVID-19 epidemic; and*
- (b) *Kau Sai Village Story Room and Ap Chau Story Room opened 53 days and 54 days respectively, and their average numbers of visitors per service day were 25 and 382 respectively.*

For the six visitor centres with the operation outsourced (see para. 3.4), the opening schedule is stipulated in the contracts.

3.12 Audit reviewed the opening schedule of visitor centres as of August 2022 and found that they did not match with the availability of public transport to the related geosites, as follows:

- (a) while regular kaito ferry services from Ma Liu Shui to Ap Chau were available on Saturdays, Sundays and public holidays, Ap Chau Story Room was not open on Saturdays; and
- (b) from 7 July 2022, a regular kaito ferry service from Sam Mun Tsai to Lai Chi Wo/Kat O/Ap Chau on Tuesdays and Thursdays was provided on a trial basis until 31 December 2022. However, the four story rooms at the geosites concerned were not open on the said days.

3.13 Upon enquiry, AFCD informed Audit in September 2022 that:

- (a) Ap Chau Story Room was operated by members of the Ap Chau community who had to attend a church service on Saturdays and hence no one from the community was able to operate the story room. AFCD had discussed with the Ap Chau community and decided to maintain the arrangement in the spirit of collaboration; and
- (b) it tried to strike a balance between the cost of opening the story rooms and the services provided to visitors. The new kaito ferry service from Sam Mun Tsai to Lai Chi Wo, Kat O and Ap Chau on weekdays was a trial and it was expected that the number of visitors would be lower than that on weekends. AFCD would continue to monitor the number of passengers and review the opening schedule if the service would become regular. In such case, the decision would still depend on the availability of villager operators, the expected number of visitors and the cost of operating the centres on the extra days.

3.14 According to AFCD, visitor centres are the most informative and important education facilities in the geopark (see para. 3.4). In Audit's view, to facilitate public understanding of Hong Kong Geopark, AFCD needs to keep under review the opening schedule of visitor centres, taking into account the availability of public transport and the possible measures that can be taken to fill the service gaps (e.g. hiring temporary staff or using audio guide during the operator's absence).

Need to clearly set out service requirements of visitor centres in the midst of COVID-19 epidemic

3.15 As of June 2022, the operation of six visitor centres was outsourced (see para. 3.4). Under the operation contracts, the services required for the five story rooms mainly included centre operation services while that for Volcano Discovery Centre mainly included counter and operation services as well as guided tours.

3.16 Since the outbreak of the COVID-19 epidemic in 2020, the opening schedule of visitor centres of Hong Kong Geopark has been affected. Audit examined the services provided by the operator of Volcano Discovery Centre in 2021-22 and noted the following:

- (a) according to the operation contracts (Note 20):
 - (i) ***Counter and operation services.*** Two staff are required for providing counter and operation services on weekdays and four staff on Saturdays, Sundays and public holidays; and

Note 20: *In 2021-22, three contracts were involved:*

- (a) *the contract for the provision of services on centre operation and guided tours from 15 July 2020 to 14 July 2021;*
- (b) *the contract for the provision of visitor services at the information kiosk at East Dam from 1 October 2020 to 14 July 2021; and*
- (c) *the contract for the provision of services on centre operation (including at the information kiosk at East Dam) and guided tours from 15 July 2021 to 14 July 2023.*

The total contract cost of these contracts for 2021-22 was about \$1.6 million.

- (ii) ***Guided tours.*** Guided tour services should be provided on Saturdays, Sundays and public holidays, including free guided tours at the centre (at least two tours per day), paid guided tours (at least one land-based tour and one boat tour per day), and paid geopark shuttle bus guided tours to East Dam (at least three round-trip tours per day). At least one free guided tour in the centre should also be provided per day on weekdays. There should be no minimum number of participants per tour; and
- (b) the services provided in 2021-22 (see Table 3) were as follows:
 - (i) the centre was closed for 82 (23%) of 363 days (i.e. total service days required), with counter and operation services at the centre suspended at the same time. The counter services at the information kiosk at East Dam were provided for the full year;
 - (ii) free guided tours at the centre and paid land-based tours were suspended for full year. Audit further examination revealed that these tours had been suspended since mid-July 2020 and had not been resumed up to August 2022 (i.e. over two years); and
 - (iii) paid boat tours and paid shuttle bus guided tours were suspended for about 101 (89%) and 110 (96%) of 114 days (i.e. total service days required) respectively.

Table 3

**Services provided by operator of Volcano Discovery Centre
(2021-22)**

Type of services	No. of days		
	With services offered (a)	With services suspended (b)	Total (Note) (c) = (a) + (b)
(a) Counter and operation services			
At centre	281 (77%)	82 (23%)	363 (100%)
At information kiosk at East Dam	114 (100%)	—	114 (100%)
(b) Guided tours			
Free guided tour at centre	—	363 (100%)	363 (100%)
Paid land-based tour	—	114 (100%)	114 (100%)
Paid boat tour	13 (11%)	101 (89%)	114 (100%)
Paid shuttle bus tour to East Dam	4 (4%)	110 (96%)	114 (100%)

Source: Audit analysis of AFCD records

Note: Under the contracts, in 2021-22, counter and operation services and free guided tours at the centre should be provided every day (except the first two days of Chinese New Year) (i.e. 363 days) while the other services should be provided on Saturdays, Sundays and public holidays (i.e. 114 days).

3.17 **Alternative services not provided in the midst of COVID-19 epidemic.** From 2019-20 to 2021-22, Volcano Discovery Centre was closed for 9.7 (27%) of the 36 months due to the COVID-19 epidemic (Note 21). Audit noted that:

- (a) there was no contract clause in the operation contracts to specifically cater for the service provision and the payment mechanism in the midst of COVID-19 epidemic where the required services could not be provided;

Note 21: Volcano Discovery Centre was closed for 1.4 months in 2019-20, 5.6 months in 2020-21 and 2.7 months in 2021-22 (i.e. totalled 9.7 months).

- (b) no documentation was available showing that AFCD had requested the operator to provide alternative services during the closure of the visitor centre; and
- (c) the full contract cost had been paid to the operator for the period. According to AFCD, this was in line with the government policy to retain jobs under the COVID-19 epidemic despite normal services were affected.

3.18 Audit noted that apart from Volcano Discovery Centre, other visitor centres were also closed intermittently during the COVID-19 epidemic. In Audit's view, alternative services (e.g. virtual tours and audio guides) may be provided by the visitor centres to promote Hong Kong Geopark when the centres are closed. AFCD needs to clearly set out the service requirements (e.g. specifying the provision of alternative services and payment mechanism) in the operation contracts of visitor centres in future to cater for situations where the required services cannot be provided in the midst of the COVID-19 epidemic.

3.19 ***Guided tour services suspended for a long time.*** When Volcano Discovery Centre was open, some services (e.g. guided tours) continued to be suspended (see para. 3.16(b)). Audit noted that:

- (a) some services had been suspended for a long time. For example, free guided tours at the centre and paid land-based tours had been suspended since mid-July 2020 and had not been resumed up to August 2022 (i.e. over two years); and
- (b) no documentation was available showing the criteria for the suspension and resumption of services. For example, while paid boat tours and paid shuttle bus guided tours had resumed for 13 and 4 days respectively in 2021-22 (see Table 3 in para. 3.16(b)), other tours (e.g. free guided tour at the centre) had not.

3.20 Upon enquiry on the guided tour services provided by Volcano Discovery Centre, AFCD informed Audit in September 2022 that:

- (a) under the COVID-19 epidemic, all guided tours provided by the operator had to be suspended when the centre was closed. The resumption of guided

tours organised by the operator needed to follow the relevant anti-epidemic requirements, mainly the restriction on group gathering and relevant requirements for local group tours;

- (b) for free guided tours for groups at the centre, it was also affected by the restriction on group gatherings. During the epidemic, those tours had only been organised in January 2020 (before the restriction in (a) above) and June to July 2020 (when there was a window under which the restriction was relaxed to allow gathering of up to 50 people). The free guided tours for groups were not provided currently due to the group gathering restriction of four people, and the staff of Volcano Discovery Centre was providing interpretation services to individual visitors as an alternative; and
- (c) for paid guided tours provided by the operator, AFCD allowed the tours to be resumed provided they could meet the relevant requirements for local group tours. On the other hand, noting that the tours were self-financed and might not be profitable under the epidemic, the operator was allowed to decide whether to organise the paid guided tours under the epidemic.

3.21 Audit noted that local group tours might be resumed (Note 22) after fulfilling certain requirements, such as restriction on the number of participants, vaccine pass requirements and prior registration with TIC. However, up to August 2022, the relevant tour services had not yet been provided. In Audit's view, subject to the compliance with the relevant requirements, AFCD needs to take measures to ensure that guided tour services of Volcano Discovery Centre are provided as far as practicable.

Scope for improvement in conducting visitor surveys

3.22 According to the Efficiency Office, public satisfaction with the quality and efficiency of public services is a useful measure of the overall performance of government departments. Audit noted the following issues relating to visitor surveys for Hong Kong Geopark:

Note 22: *Local group tours might be resumed during specified periods of the epidemic, including from 29 April 2021 to 6 January 2022 (2021-22) and since 21 April 2022.*

- (a) ***Visitor surveys not conducted regularly.*** According to AFCD, visitor surveys were conducted in 2012, 2013, 2015 and 2016 at four locations (i.e. East Dam, Lai Chi Wo, Tung Ping Chau and Sai Kung) to assess visitors' satisfaction levels on the geosites and their facilities. Since March 2016 and up to June 2022, apart from the visitor survey conducted at Volcano Discovery Centre (see (b) below), no visitor survey had been conducted for Hong Kong Geopark. In recent years, three new geosites with land-tour routes and five story rooms had been launched, and improvements to existing geosites had also been made (see paras. 2.9(a) and (c) and 2.11(a)). In Audit's view, AFCD needs to conduct regular visitor surveys to gauge visitors' feedback on Hong Kong Geopark;
- (b) ***Need to make better use of information technology in conducting visitor surveys.*** Since July 2014, an electronic device has been set up in Volcano Discovery Centre for conducting voluntary surveys on visitors' satisfaction level of the centre. According to AFCD, the survey results are monitored on a yearly basis. Audit noted that:
- (i) the annual response rate (Note 23) of the survey was on the low side (ranged from 0.2% to 1.2%) in the period from 2017 to 2022 (up to March); and
 - (ii) only one device was available for completion of the visitor survey at the centre. No Quick Response code (QR code) was available for completing the survey online.

In Audit's view, AFCD needs to make better use of information technology to facilitate the conduct of visitor surveys (such as making use of QR code technology for online completion of surveys by visitors); and

Note 23: *The response rate is calculated by dividing the total number of surveys completed by the total number of visitors to Volcano Discovery Centre.*

- (c) ***Need to ensure compliance with contract requirements on visitor surveys.*** According to the operation contract for Volcano Discovery Centre (Note 24), the operator is required to carry out customer service surveys through questionnaires, collect feedback after each guided tour and submit monthly returns on survey analysis. Audit examined the monthly reports of 2017 to 2022 (up to March) and found that the reports only included the number of questionnaires received for paid guided tours. The results and the required survey analysis were not included in the monthly reports submitted, contrary to the contract requirement. In Audit's view, AFCD needs to step up monitoring of the operator's compliance with the contract requirements on visitor surveys.

Audit recommendations

3.23 Audit has recommended that the Director of Agriculture, Fisheries and Conservation should:

- (a) **review the methodology in calculating the visitor numbers of Hong Kong Geopark, taking into account relevant factors (e.g. newly developed geosites, geosites being excluded and visitor numbers for visitor centres) with a view to improving the accuracy of the figures;**
- (b) **keep under review the number of visitors to visitor centres and take actions to improve the patronage of the visitor centres;**
- (c) **keep under review the opening schedule of visitor centres, taking into account the availability of public transport and the possible measures that can be taken to fill the service gaps (e.g. hiring temporary staff or using audio guide during the operator's absence);**
- (d) **clearly set out the service requirements (e.g. specifying the provision of alternative services and payment mechanism) in the operation contracts of visitor centres in future to cater for situations where the required services cannot be provided in the midst of the COVID-19 epidemic;**

Note 24: *There are no similar terms in the operation contracts of other visitor centres.*

- (e) **take measures to ensure that guided tour services of Volcano Discovery Centre are provided as far as practicable;**
- (f) **conduct regular visitor surveys to gauge visitors' feedback on Hong Kong Geopark and make better use of information technology to facilitate the conduct of visitor surveys (such as making use of QR code technology for online completion of surveys by visitors); and**
- (g) **step up monitoring of the operator's compliance with the contract requirements on visitor surveys.**

Response from the Government

3.24 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that:

- (a) AFCD has reviewed the methodology in calculating the number of visitors of Hong Kong Geopark, and will include the figures for Tung Ping Chau and relevant figures obtained from other sources;
- (b) AFCD will explore ways to improve the patronage of the visitor centres, inter alia, through arrangements of guided tours, enhancement of public transport services and publicity;
- (c) under the prevailing anti-epidemic requirements, the free guided tour services at Volcano Discovery Centre have resumed since 1 October 2022. For paid guided tour services, AFCD will discuss with the operator the difficulties in resuming the paid guided tours, taking into account relevant requirements on local group tours (e.g. insurance for all participants which includes coverage against COVID-19) and demand for these tours, and facilitate the resumption of the paid guided tour services as far as practicable; and
- (d) AFCD has instructed the operator of Volcano Discovery Centre to resume regular visitor surveys and include the results and analysis in the monthly reports.

Provision of geopark facilities and information

3.25 In Hong Kong Geopark, basic visitor facilities, such as trails, signs, information boards and toilets, are provided. According to AFCD, the geo-routes provide the most important platform of all the geopark facilities for promoting geo-conservation messages to geopark visitors. High quality and regularly maintained geopark facilities, including interpretation panels (see Photograph 7 for an example), safety/warning signs (see Photograph 8 for an example), direction signs and distance posts, are provided along the geo-routes where appropriate.

Photograph 7

An interpretation panel



Source: Photograph taken by Audit staff in June 2022

Photograph 8

A warning sign



Source: Photograph taken by Audit staff in June 2022

3.26 According to AFCD, there are four key communication channels to convey basic information about Hong Kong Geopark, including visitor centres, information boards, geopark website, and leaflets and publications. The geopark information should be up-to-date, informative, interesting, easily understandable and readily accessible to geopark visitors and the general public.

Scope for improving provision of geopark facilities

3.27 Audit noted that there was scope for improving the provision of geopark facilities, as follows:

- (a) ***Interpretation panel.*** According to AFCD, the land-based tour routes are designed to be self-guided with on-site interpretation panels. According to AFCD guidelines, the signage should be sufficient to present the key geological and ecological heritage attractions along all geo-routes. For the 12 geosites with land-tour routes, AFCD has designed observation points along the routes for visitors. Audit noted that, as of July 2022, interpretation panels were not available at some observation points in 7 (58%) of the 12 geosites (e.g. volcanic breccia and “pineapple bun” rocks at Sharp Island and quartz vein at Ma Shi Chau). Upon enquiry, AFCD informed Audit in August 2022 that:
 - (i) in the aftermath of typhoon Mangkhut in 2018, many coastal signs were damaged or washed away, particularly all interpretation panels at Sharp Island and Ma Shi Chau; and
 - (ii) it decided that signs and interpretation panels provided in coastal geosites should be durable to withstand typhoon, and small and easy to install. Considering the difficulty in installing and maintaining signs that could fulfil both criteria at Sharp Island and Ma Shi Chau, AFCD decided to only maintain the most essentials ones (e.g. warning signs).

However, Audit noted that AFCD had not explored alternative means (e.g. making arrangements for displaying QR codes) for providing important information at the key geological and ecological heritage attractions without interpretation panels; and

- (b) ***Code sign.*** According to AFCD guidelines, the “Code for Visiting Geosites in Hong Kong” (Note 25) must be posted at appropriate locations on all geo-routes. However, Audit noted that the code sign was not

Note 25: *The “Code for Visiting Geosites in Hong Kong” includes code and safety guidelines for the public, such as not to climb the rock columns or walk on severely weathered or eroded surfaces, and keep the countryside clean.*

available in 3 (25%) of 12 geosites with land-tour routes as of July 2022. Upon enquiry, AFCD informed Audit in September 2022 that the code sign was not available in the 3 geosites (i.e. Kat O, Kau Sai Chau and Yim Tin Tsai) due to difficulty in identifying suitable sites for installation.

3.28 In Audit's view, AFCD needs to provide geopark facilities in geosites as required by its guidelines (e.g. interpretation panel and code sign), and explore alternative means (e.g. making arrangements for displaying QR codes) to provide important information at key geological and ecological heritage attractions without interpretation panels.

Need to properly maintain geopark facilities

3.29 According to AFCD, its staff conduct inspections of visitor facilities in geosites of Hong Kong Geopark, and when damage to the facilities or trails is found, the damage will be reported and follow-up actions (e.g. repair and replacement) will be taken. Audit noted the following issues:

- (a) ***Some geopark facilities not properly maintained.*** According to AFCD guidelines, signs should be well maintained to ensure that the information is visible. Audit conducted site visits to seven geosites with land-tour routes and eight visitor centres in the period from April to August 2022 and found that:
 - (i) the logos of UNESCO Global Geoparks and Hong Kong Geopark in a visitor centre and some of the words in a notice to visitors in another visitor centre had faded;
 - (ii) the grid reference and information of two distance posts were faded (see Photograph 9 for an example); and
 - (iii) a multi-language audio guide in a visitor centre (see Photograph 10) was out of service;

Photograph 9

**Faded information
of a distance post in a geosite**



Source: Photograph taken by Audit staff in August 2022

Photograph 10

**A multi-language audio guide
in a visitor centre**



Source: AFCD records

- (b) ***Some damaged or worn signs not timely repaired.*** According to AFCD guidelines, any damaged or worn signs must be replaced immediately. However, Audit examined the records of 16 damaged or worn signs reported in the period from 2020 to 2022 (up to March) and found that the time elapsed from the identification of the damages to the completion of repair or replacement ranged from 4 days to 5 months (averaging 3 months); and
- (c) ***Some signs omitted from record of geopark signs.*** According to AFCD guidelines, an accurate record of all geopark signs, including total number, location, contents and last date of maintenance, should be kept. Audit reviewed the geopark sign records as of June 2022 and found that the signs in Kau Sai Chau were omitted.

3.30 In Audit's view, AFCD needs to step up efforts in repairing or replacing damaged geopark facilities, and update the record of geopark signs timely to facilitate monitoring and maintenance of the facilities.

Need to enhance provision of geopark information

3.31 There are four key communication channels to convey basic information about Hong Kong Geopark, including visitor centres, information boards, geopark website, and leaflets and publications. According to AFCD guidelines:

- (a) all geopark information should be reviewed monthly, and any information that is out of date or incorrect should be changed. The records and outcomes of the reviews must be properly documented; and
- (b) information on geo-routes (both land-based and sea-based) should be regularly reviewed (at least once a year) to ensure its validity and accuracy.

3.32 Audit noted that the following issues relating to the provision of geopark information:

- (a) ***Some geopark information outdated or inaccurate.*** Audit conducted site visits to seven geosites with land-tour routes and eight visitor centres in the period from April to August 2022, and examined leaflets (displayed at the eight visitor centres and those available on the geopark website) and geopark information on websites as of July 2022. The audit findings are as follows:
 - (i) 10 (7%) of 149 QR codes shown in signage (e.g. information boards and interpretation panels), exhibits and other promotional materials (e.g. banners and posters) in geosites and visitor centres were linked to error pages (i.e. page not available). Besides, 26 (25%) of 105 QR codes shown in the leaflets were invalid;
 - (ii) some exhibits in the visitor centres and the contents in the leaflets were outdated. For example, the map of Hong Kong Geopark showed 9 instead of 12 geosites with land-tour routes;
 - (iii) on the websites of UNESCO Global Geoparks and Asia Pacific Geoparks Network, the links to the geopark website were directed to error pages (i.e. page not available); and

- (iv) on the geopark website, one link to the website of the National Geoparks of China was directed to an error page. Besides, the description of a book shown on the geopark website was inaccurate.

In Audit's view, AFCD needs to take measures to ensure that the information disseminated in visitor centres, information boards, leaflets and websites is accurate and up-to-date;

- (b) ***Relevant and updated leaflets not always available.*** Audit examined the leaflets displayed at the eight visitor centres (during site visits in June and July 2022) and those available on the geopark website as of July 2022, and found that there were a total of 29 leaflets relating to Hong Kong Geopark. Audit noted that:

- (i) the number of leaflets available at the eight visitor centres and on the geopark website varied from 3 to 16 (averaging 10 leaflets). Some leaflets on particular geosites were not available at the nearest visitor centres and designated locations (Note 26). For example, a leaflet on Sharp Island was available in Tai Po Geoheritage Centre but not in Volcano Discovery Centre (the major gateway to Sharp Island); and
- (ii) 7 leaflets had more than one version and only the old versions were available at six visitor centres. The latest versions were 23 months to 5 years (averaging 3.4 years) newer than the ones being displayed.

As of June 2022, no documentation was available showing the criteria in selecting leaflets to be placed at the visitor centres and on the geopark website. In Audit's view, AFCD needs to set out such criteria in AFCD guidelines; and

Note 26: *According to AFCD guidelines, all published leaflets are available at AFCD's reception counter at the Cheung Sha Wan Government Offices, Lions Nature Education Centre and Volcano Discovery Centre and on the geopark website. Audit's site visits in June and July 2022 found that the number of leaflets available at these locations were nil, 11, 12 and 16 respectively.*

(c) *New logo of UNESCO Global Geoparks not fully adopted.* UNESCO Global Geoparks changed its logo in April 2021. However, Audit's site visits in the period from April to August 2022 found that the old logo was still in use in 6 (75%) of the 8 visitor centres, and the information boards, interpretation panels and warning signs at the 7 geosites visited. Similarly, Audit noted that the new logo was not adopted in some leaflets. Upon enquiry, AFCD informed Audit in September 2022 that:

- (i) the Secretariat of UNESCO Global Geoparks was aware that adopting the new logo could be a financial burden for geoparks, and had suggested geoparks to use new logos when the facilities or leaflets with the old logo were replaced; and
- (ii) it had decided to adopt the new logo when the information boards, interpretation panels, warning signs and leaflets were updated or replaced, so as to minimise wastage and maximise cost-effectiveness.

However, Audit found that the new logo of UNESCO Global Geoparks was not adopted in a leaflet published in April 2022. In Audit's view, AFCD needs to take measures to ensure that the new logo of UNESCO Global Geoparks is adopted when updating or replacing geopark promotion materials/facilities.

3.33 Upon enquiry about the review of geopark information provided in the communication channels, AFCD informed Audit in August 2022 that:

- (a) although the exact review frequency might not entirely meet the frequency set in AFCD guidelines (see para. 3.31), all geopark information (including that of geosites and geo-routes) had been subject to reviews and updating from time to time to ensure its validity and accuracy:
 - (i) in general, information on geopark, geo-routes as well as sign locations and contents, were reviewed or updated under several instances, such as preparation of revalidation (2015, 2017 and 2021) and revamp of the geopark website (phase one in 2020 and phase two in 2022); and

- (ii) in addition to regular reviews and updating, a comprehensive review of information/interpretation materials for geo-routes would be undertaken on a need basis for enhancing the attractions. Previous reviews completed included Kat O and Ap Chau (2021) and the planned reviews included Sharp Island and Lai Chi Wo (in progress);
- (b) after a review was conducted, changes were directly made and no review/assessment report was required to be prepared. Revision records could be reflected by comparing the previous version and the updated version (e.g. different versions of leaflet, interpretation panels and website contents); and
- (c) it was reviewing its guidelines, and would likely make changes based on the experience in the last few years (the last revision of the guidelines was conducted in 2015). Proposed changes included lowering the review frequency of geopark information from monthly to yearly.

3.34 In Audit's view, AFCD needs to complete the review on its guidelines for Hong Kong Geopark as soon as practicable, and take measures to ensure compliance with the guidelines.

Audit recommendations

3.35 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **provide geopark facilities in geosites as required by AFCD guidelines (e.g. interpretation panel and code sign), and explore alternative means (e.g. making arrangements for displaying QR codes) to provide important information at key geological and ecological heritage attractions without interpretation panels;**
- (b) **step up efforts in repairing or replacing damaged geopark facilities;**
- (c) **update the record of geopark signs timely to facilitate monitoring and maintenance of the facilities;**

- (d) **take measures to ensure that:**
 - (i) **the information disseminated in visitor centres, information boards, leaflets and websites is accurate and up-to-date; and**
 - (ii) **the new logo of UNESCO Global Geoparks is adopted when updating or replacing geopark promotion materials/facilities;**
- (e) **set out the criteria for displaying leaflets at visitor centres and on the geopark website in AFCD guidelines; and**
- (f) **complete the review on AFCD guidelines for Hong Kong Geopark as soon as practicable, and take measures to ensure compliance with the guidelines.**

Response from the Government

3.36 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that:

- (a) AFCD will explore provision of on-site interpretation panels and code signs as far as practicable. In case that on-site interpretation panels and code signs are not feasible due to practical site constraints, AFCD will explore alternative ways to disseminate the message, such as through websites, geopark story rooms and banners;
- (b) AFCD has taken measures to enhance the maintenance of geopark facilities, and to ensure that the information disseminated is up-to-date, including the replacement of outdated geopark facilities, adding the signs of Kau Sai Chau to the records and setting out the criteria for displaying leaflets at visitor centres and on the geopark website;
- (c) AFCD will adopt the new logo of UNESCO Global Geoparks when updating or replacing geopark promotion materials/facilities; and

- (d) AFCD will complete the review of guidelines for Hong Kong Geopark as soon as possible and take measures as far as possible to ensure compliance with the guidelines.

Geopark Guide System

3.37 According to AFCD, quality tour guides are essential in providing worthwhile tours for visitors. A Geopark Guide System is in place to encourage existing tour guides to build capacity and deepen their knowledge in line with global standards. The system comprises two grades, namely the Recommended Geopark Guide (R2G) and the Accredited Geopark Guide (A2G) (hereinafter collectively referred to as geopark guides), as follows:

- (a) **R2G.** In June 2010, AFCD and a non-governmental organisation (NGO) (hereinafter denoted as NGO A — Note 27) jointly established the R2G system. Candidates are required to receive necessary basic training, accumulate enough guiding experience and pass an assessment before they can become an R2G. A tour led by an R2G with a maximum guide-to-participant ratio of 1:25 and approved by AFCD and NGO A may be recognised as an R2G tour (see para. 3.46); and
- (b) **A2G.** To further recognise the Geopark Guide System, a Geopark Guide Accreditation System has been set up since March 2011. TIC is the accrediting institution and issues A2G certificate to tour guides who have passed an extra assessment examination.

3.38 A2Gs and R2Gs are required to be reassessed every three years and two years respectively in order to encourage continuing education and ensure that they will keep abreast of the latest development of Hong Kong Geopark and geoconservation. An A2G Assessment Board and an R2G Assessment Panel (Note 28) have been established for assessment of new applications and re-assessment of A2Gs and R2Gs. AFCD is the Secretariat of the Geopark Guide System and is

Note 27: *NGO A has been set up aiming at promoting the importance of geoconservation.*

Note 28: *The A2G Assessment Board and the R2G Assessment Panel comprise representatives of AFCD, TIC and NGO A.*

responsible for maintaining the website of the system (hereinafter referred to as the geopark guide website).

Scope for improvement in recruiting and reassessing geopark guides

3.39 *Scope for improvement in recruiting geopark guides.* As of August 2022, there were 3 A2Gs and 45 R2Gs under the Geopark Guide System. Audit examined records of geopark guide recruitment exercises and found that:

- (a) **A2G.** Since the launch of the A2G system in March 2011 and up to March 2022, only one round of recruitment exercise had been conducted in March 2012. Accordingly, no new A2G had been recruited for 10 years; and
- (b) **R2G.** Since the launch of the R2G system in June 2010 and up to March 2022, seven rounds of recruitment exercises had been conducted. There was a gap of over five years between the sixth (in September 2015) and the seventh (in January 2021) round. According to AFCD, the recruitment of R2Gs was put on hold in 2018-19 as a new certification system of geopark guide had been proposed (see para. 3.51). Audit noted that 11 applications were received between 2015 (after the application deadline for the sixth round of recruitment exercise) and 2018. The seventh round of recruitment exercise was carried out in January 2021 (including the 11 applications received between 2015 and 2018) after the proposed system had been cancelled.

3.40 Upon enquiry about the low enrolment rate, AFCD informed Audit in July and September 2022 that:

- (a) the main objective of the Geopark Guide System was to provide high quality tour guides and guiding service for visitors. The interest of tour guides to the Geopark Guide System was strongly associated with the market demand, which had plummeted under the COVID-19 epidemic;
- (b) there had not been any target set for the enrolment of R2Gs and A2Gs, and the general idea was to start a new round of recruitment exercise when there

was enough interest (at least 10 people showed interest by submitting applications); and

- (c) various publicity activities had been organised to promote the R2G/A2G qualification, such as providing talks to tour escorts and tour guides, and providing information of the Geopark Guide System on websites (including the geopark website, the geopark guide website and the website of TIC), leaflets, information boards and promotional videos.

3.41 In Audit's view, AFCD needs to continue to promote Geopark Guide System with a view to recruiting more quality geopark guides, and take measures to ensure that recruitment exercises for geopark guides are conducted in a timely manner.

3.42 ***Delay in re-assessment of geopark guides.*** A2Gs and R2Gs are required to be reassessed every three years and two years respectively. To retain the qualifications, the geopark guides need to meet certain requirements, including continuing education and guiding experience. From 2017 to 2022 (up to March), two (in 2018 and 2021) and one (in 2018) rounds of re-assessment for A2Gs and R2Gs had been conducted respectively. Audit examined the re-assessment records and noted delays in reassessing geopark guides, as follows:

- (a) ***Deferral of re-assessment.*** For R2Gs, while the re-assessment should be conducted in 2020 (i.e. two years after the one conducted in 2018), the re-assessment was not yet conducted as of March 2022 (i.e. a delay of two years). According to AFCD, the re-assessment of R2Gs was deferred due to the COVID-19 epidemic;
- (b) ***Re-assessment of A2Gs.*** In the 2021 re-assessment of A2Gs:
 - (i) while the accreditation of A2Gs expired in two batches in April and May 2021, AFCD only issued an email to the A2Gs concerned for the submission of re-assessment documents in September 2021 (i.e. 4 to 5 months after the expiry dates of the previous accreditation); and

- (ii) the notification of passing the re-assessment was only issued to the A2Gs concerned in November 2021 (i.e. 6 to 7 months after the expiry dates of the previous accreditation in April and May 2021). As stated in the notification, the accreditation would be effective only upon the issue of A2G pass by TIC. In the period between the expiry date of the previous accreditation and the issue date of the renewed A2G pass, the tour guide concerned should not lead any tour as an A2G; and
- (c) ***Re-assessment of R2Gs.*** In the 2018 re-assessment of R2Gs:
 - (i) while the qualification of R2Gs expired in two batches in April and June 2018, AFCD only issued an email to the R2Gs concerned for the submission of re-assessment documents in July 2018 (i.e. 1 to 3 months after the expiry dates of the previous qualification). According to AFCD, the expiry date of the R2G status had been extended to June 2018; and
 - (ii) the notification of passing the re-assessment was only issued to the R2Gs concerned in November 2018 (i.e. 5 months after the extended expiry date of the previous qualification in June 2018), which stated that the status of R2G would be extended for two years from the date of notification. In the period between the extended expiry date of the previous qualification and the effective date of the renewed qualification, the R2G concerned should not lead any R2G tour.

3.43 In Audit's view, AFCD needs to take measures to ensure that re-assessment of geopark guides is conducted in a timely manner.

3.44 ***Need to issue guidelines for recruitment and re-assessment of geopark guides.*** Audit noted that guidelines had not been issued for recruitment and re-assessment of A2Gs and R2Gs, including:

- (a) the criteria for commencing a new round of recruitment exercise of geopark guides (see para. 3.40(b));

- (b) the timeframe for informing A2Gs and R2Gs for submission of re-assessment documents and processing re-assessments (see para. 3.42(b) and (c)); and
- (c) the criteria and authorities for exercising discretion in re-assessments. In the 2018 re-assessment of R2Gs, Audit noted that a candidate had been given an extension of two months for submission of documents and another candidate an extension of three months for counting guiding experience. However, no documentation was available showing the justification and approval for exercising the discretion.

3.45 In Audit's view, AFCD needs to issue guidelines for recruitment and re-assessment of geopark guides, including the criteria for commencing a recruitment exercise, timeframes for processing re-assessment applications as well as the criteria and authorities for exercising discretion.

Need to step up monitoring of compliance with requirements for R2G tours

3.46 An R2G tour must be led by an R2G with a low guide-to-participant ratio (maximum being 1:25) to ensure that all participants are well taken care of (Note 29). AFCD and NGO A check and approve proposed R2G tours. When a tour is approved to operate as an R2G tour, the tour organiser will automatically be added to the R2G operator list on the geopark guide website. As of August 2022, there were 7 R2G operators.

3.47 According to the requirements for R2G tours, the services must be ready for bi-annual inspections by AFCD for renewal of the recognition. Audit noted that from August 2017 to March 2019, AFCD had conducted six inspections of R2G tours. From April 2019 to August 2022, no such inspections had been conducted. In Audit's view, AFCD needs to enhance monitoring of the compliance with the requirements for R2G tours, including conducting inspections as required.

Note 29: *The R2G tour is also required to meet other criteria such as providing the services within Hong Kong Geopark and complying with all legal requirements.*

Need to ensure accuracy and completeness of information on geopark guide website

3.48 AFCD is responsible for maintaining the geopark guide website. According to AFCD, after announcement of the assessment results for A2Gs and R2Gs, the list of geopark guides (with personal information and qualifications) on the geopark guide website will be updated. According to the geopark guide website, as of August 2022, there were 4 A2Gs, 45 R2Gs and 7 R2G operators.

3.49 Audit examined the information on the geopark guide website and found that as of August 2022:

- (a) the number of A2G should be 3 according to the A2G Directory on TIC website whereas it was 4 on the geopark guide website;
- (b) the photographs of 6 (13%) of 45 R2Gs were not available (i.e. 18 months after announcement of the latest recruitment results in February 2021);
- (c) the website address of 1 (14%) of 7 R2G operators shown was linked to an error page; and
- (d) 2 (29%) of 7 R2G training courses shown were no longer available.

3.50 In Audit's view, AFCD needs to take measures to ensure the accuracy and completeness of information on the geopark guide website.

Need to keep under review Geopark Guide System

3.51 In 2018-19, AFCD and TIC attempted to introduce a new kind of accredited guide under an enhanced certification system to replace the A2G and R2G qualifications in order to further enhance the label and branding of geopark guides. The key features of the proposed system were as follows:

- (a) although geotours led by A2Gs and R2Gs were both recognised as quality geotours, only A2Gs were allowed to receive inbound visitors within Hong

Kong Geopark (Note 30) and R2Gs had to hold a valid tourist guide pass issued by TIC for receiving inbound visitors. As of April 2018, about half of the geopark guides did not hold such valid tourist guide passes (Note 31). The tour guides accredited under the proposed system would be required to hold either a valid tourist guide pass or a tour escort pass issued by TIC; and

- (b) in 2017, the “Same Roots, Same Origins” project was launched to promote the history and intangible cultural heritage of local geopark communities. Apart from the traditional geological interpretation, the tour guides accredited under the proposed system would be required to be highly knowledgeable about intangible cultural heritage (e.g. Hakka culture, folk religions and temple architecture).

3.52 In March 2020, the proposed system was cancelled due to the outbreak of COVID-19 and concerns from geopark guides. In June 2022, AFCD, TIC and NGO A reviewed the Geopark Guide System and agreed to keep the system of A2G and R2G as-is. AFCD and TIC also agreed to continue to cooperate on training and promotion, and to improve the quality of tour guides.

3.53 Audit noted that as of August 2022, the training courses of A2G mainly covered traditional geological interpretation (i.e. only about 7% of the A2G training hours were related to intangible cultural heritage against 38% under the proposed system). In Audit’s view, AFCD needs to keep under review the Geopark Guide System with a view to improving the quality of geopark guides, including considering the need to increase the coverage of intangible cultural heritage in A2G training courses.

Note 30: *It was a requirement that only the holder of a valid tourist guide pass could receive inbound visitors in Hong Kong. According to AFCD:*

- (a) *prior to September 2022, A2Gs were partially exempted and were allowed to receive inbound visitors inside Hong Kong Geopark; and*
- (b) *since September 2022, such exemption is no longer applicable and A2Gs who wish to receive inbound visitors must hold a valid tourist guide licence.*

Note 31: *According to AFCD, as of June 2022, 17 (34%) of the 50 geopark guides did not hold the tourist guide passes.*

Audit recommendations

3.54 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) continue to promote Geopark Guide System with a view to recruiting more quality geopark guides;**
- (b) take measures to ensure that recruitment exercises and re-assessment of geopark guides are conducted in a timely manner;**
- (c) issue guidelines for recruitment and re-assessment of geopark guides, including the criteria for commencing a recruitment exercise, timeframes for processing re-assessment applications as well as the criteria and authorities for exercising discretion;**
- (d) enhance monitoring of the compliance with the requirements for R2G tours, including conducting inspections as required;**
- (e) take measures to ensure the accuracy and completeness of information on the geopark guide website; and**
- (f) keep under review the Geopark Guide System with a view to improving the quality of geopark guides, including considering the need to increase the coverage of intangible cultural heritage in A2G training courses.**

Response from the Government

3.55 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that AFCD will, in collaboration with NGO A and TIC, conduct a holistic review on the Geopark Guide System and issue guidelines covering areas such as recruitment, re-assessment, monitoring/inspection of tours and training.

PART 4: OTHER RELATED ISSUES

4.1 This PART examines other issues relating to the management of Hong Kong Geopark, focusing on the following areas:

- (a) educational activities (paras. 4.2 to 4.12);
- (b) promotional and networking activities (paras. 4.13 to 4.25);
- (c) patrols and inspections (paras. 4.26 to 4.36); and
- (d) safety issues (paras. 4.37 to 4.44).

Educational activities

4.2 Hong Kong Geopark develops and organises educational activities for all ages to spread awareness of geological heritage and its links to other aspects of natural, cultural and intangible heritages. The activities include Geopark Schools Programme, school seminar, rock classroom and students exchange programme.

Need to strengthen actions in organising educational activities

4.3 Table 4 shows the number of educational activities organised for Hong Kong Geopark from January 2017 to March 2022.

Table 4

**Educational activities organised
(January 2017 to March 2022)**

Year	No. of educational activities
2017	72
2018	74
2019	54
2020	27
2021	20
2022 (up to March)	8

Source: AFCD records

4.4 As shown in Table 4, the number of educational activities organised for Hong Kong Geopark decreased by about 72% from 72 in 2017 to 20 in 2021. According to AFCD, the decrease was mainly due to the COVID-19 epidemic. Upon enquiry, AFCD informed Audit in August 2022 that:

- (a) under the epidemic, the suspension and resumption of educational activities of Hong Kong Geopark generally followed the relevant anti-epidemic requirements, mainly the restriction on group gathering. For educational activities for schools, only those which could be delivered online (i.e. school talks and seminars) had been provided; and
- (b) for the coming school year from September 2022, it had reviewed the anti-epidemic requirements for schools and would provide both face-to-face and online school seminars and talks.

4.5 According to AFCD, geopark education is one of the best avenues to popularise earth science knowledge, and to promote geological and nature conservation to the general public. In Audit's view, AFCD needs to strengthen actions in organising educational activities for Hong Kong Geopark, such as making

wider use of information technology in conducting educational activities (e.g. virtual tours) and exploring the feasibility in organising face-to-face programmes that are compliant with anti-epidemic requirements (e.g. field trips).

Scope for reviewing Geopark Schools Programme

4.6 Geopark Schools Programme is a key education programme of Hong Kong Geopark. According to AFCD, the programme offers a wide range of science popularisation activities to inspire students' long-term interest in earth sciences, integrated with ecology and culture, and to promote the concept of sustainable development. Audit noted the following issues:

- (a) ***Scope for reviewing quota for Geopark Schools Programme.*** According to AFCD, there is a quota of 20 schools (including primary and secondary schools) for the Geopark Schools Programme for each school year. The programme is open for application annually before the start of a school year (i.e. from early August to 30 September). In the school years 2020/21 and 2021/22, AFCD received applications from 21 schools for participation in the programme, and one school was rejected in each year as the quota of 20 schools had been exceeded. For the school year 2022/23, Audit noted that AFCD had announced on the geopark website that the quota was already full as at 4 September 2022 (i.e. about one month earlier than the application deadline of 30 September 2022). Accordingly, schools interested in the programme might not submit applications and the demand for the programme could not be ascertained; and
- (b) ***Scope for reviewing basis in selecting schools for Geopark Schools Programme.*** According to AFCD, Geopark Schools Programme is promoted on the social media of AFCD and Hong Kong Geopark. It also sends invitations to all existing Geopark Schools and any other schools who have approached the department for participating in the programme. Applications are accepted on a first-come-first-served basis, with 13 places reserved for schools taking part in the programme in the previous year and 7 places for schools not taking part in the previous year. Audit examined the list of Geopark Schools of school years 2017/18 to 2021/22 and noted that while there were 100 places for schools to participate in the programme (i.e. a quota of 20 schools each year in the five-year period), only 42 schools had participated in the programme because schools were allowed

Other related issues

to join the programme repeatedly. Of these 42 schools, 14 (33%) schools had participated for 3 to 5 years during the 5-year period.

4.7 Upon enquiry, AFCD informed Audit in August and October 2022 that:

- (a) the quota of 20 schools for Geopark Schools Programme was set for each school year taking into consideration the operational needs of Hong Kong Geopark;
- (b) the system of reserving some quota for schools that took part in the previous school year allowed schools which were keen to participate to try as many different activities as possible. The capacity building programme would help the schools develop their own science popularisation programmes in their schools; and
- (c) the ratio of 13 (schools taking part in the previous year) to 7 (schools not taking part in the previous year) was based on its experience that roughly two-third of Geopark Schools would like to continue to join the programme in the next school year. Therefore, AFCD considered 13:7 was a reasonable ratio allowing appropriate number of “keen” schools to join while new schools would also have a fair chance to join.

4.8 Audit noted that the quota for Geopark Schools Programme had remained unchanged since the launch of the programme in 2014 and the demand had exceeded the quota in recent years (see para. 4.6(a)). Besides, while the ratio of 13:7 for selecting schools in participating the programme was determined based on AFCD’s experience (see para. 4.7(c)), the actual demand for the programme was unknown (see para. 4.6(a)). As the programme helps equip schools with the knowledge to develop their own science popularisation programmes, it is desirable for more schools to join. Audit considers that AFCD needs to conduct a review of Geopark Schools Programme, such as ascertaining the demand for the programme and reviewing the basis in selecting schools for participation, and take follow-up actions as appropriate.

Need to improve evaluation procedures of educational activities

4.9 It is important to collect feedback from participants of the educational activities for continuous improvement. Upon enquiry on the evaluations conducted

on educational activities in the period from 2017 to 2022 (up to March), AFCD informed Audit in June 2022 that:

- (a) its staff directly carried out or were highly involved in most of the education programmes (e.g. presenting during school seminars and conducting workshops). Feedback was directly collected from students and teachers during the activities, or through discussions with teachers after the activities; and
- (b) an online survey was conducted after an online exchange between students of Hong Kong Geopark and that of a UNESCO Global Geopark in Romania in May 2021.

4.10 Audit noted that, while feedback was collected by AFCD staff (see para. 4.9(a)), no documentation was available showing the feedback from the participants. Besides, for educational activities organised in the period from 2017 to 2022 (up to March), only one online survey was conducted (see para. 4.9(b)). In Audit's view, AFCD needs to maintain proper documentation on evaluation of educational activities and make better use of information technology in collecting feedback from participants (e.g. online survey).

Audit recommendations

4.11 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **strengthen actions in organising educational activities for Hong Kong Geopark, such as making wider use of information technology in conducting educational activities (e.g. virtual tours) and exploring the feasibility in organising face-to-face programmes that are compliant with anti-epidemic requirements (e.g. field trips);**
- (b) **conduct a review of Geopark Schools Programme, such as ascertaining the demand for the programme and reviewing the basis in selecting schools for participation, and take follow-up actions as appropriate; and**

Other related issues

- (c) **maintain proper documentation on evaluation of educational activities and make better use of information technology in collecting feedback from participants (e.g. online survey).**

Response from the Government

4.12 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that AFCD will:

- (a) continue to organise various educational activities, and suitably adjust the format of educational activities under the prevailing epidemic situation. Face-to-face programmes will be preferred to virtual programmes if social distancing requirements are relaxed;
- (b) review the Geopark Schools Programme, with a view to entertaining more schools while retaining some “keen” schools which can further promote the geopark by developing science popularisation programme in their schools; and
- (c) collect feedback from Geopark Schools as well as participants of other education programmes and properly document the evaluation outcomes.

Promotional and networking activities

4.13 According to AFCD, the objectives of promotion are to raise awareness on Hong Kong Geopark, and to facilitate visitors’ visits in order to promote green tourism and local sustainable development. Table 5 shows the number of promotional activities organised in the period from January 2017 to March 2022.

Table 5

**Promotional activities organised
(January 2017 to March 2022)**

Year	No. of promotional activities
2017	8
2018	20
2019	7
2020	8
2021	47 (Note)
2022 (up to March)	—

Source: AFCD records

Note: According to AFCD, a high number of promotional activities were organised in 2021 to celebrate the 10th anniversary of Hong Kong Geopark's accession to GGN.

4.14 Hong Kong Geopark has also participated in and organised networking activities with other global geoparks to facilitate knowledge exchange and collaboration in order to promote the development of UNESCO Global Geoparks and GGN as a whole. Since 2019, Hong Kong Geopark has taken up the role of social media coordinator for the Asia Pacific Geoparks Network, including taking full responsibilities of two social media accounts of the Network.

Scope for improving evaluation procedures of promotional activities

4.15 According to AFCD, the effectiveness of promotional activities for Hong Kong Geopark is evaluated holistically, including through feedback of press tours and media interest (e.g. media coverage), highlighting of Hong Kong Geopark in tourism products (e.g. various geosites having become popular destination for green tourism), and promotion of Hong Kong Geopark in social media platforms of other organisations (e.g. the Hong Kong Tourism Board).

4.16 To celebrate the 10th anniversary of Hong Kong Geopark's accession to GGN in 2021, various promotional efforts were made, including roving exhibitions, community fairs, public seminars, public talks, promotional videos and a photograph album. The total number of participants for different promotional activities varied (e.g. 17,434 participants for roving exhibitions, about 7,500 participants for community fairs and 150 participants for community seminars). Upon enquiry about the collection of feedback from participants, AFCD informed Audit in September 2022 that although a formal questionnaire survey was not conducted, the feedback was collected qualitatively through chatting with participants or direct observation on their response during the events, and a systematic evaluation of community fairs had also been conducted. In Audit's view, to facilitate the analysis of participants' feedback for identifying areas for improvement, AFCD needs to improve the evaluation procedures of promotional activities (e.g. conducting formal questionnaire surveys).

Scope for improving monitoring of geopark partners

4.17 AFCD works with different partners in promoting Hong Kong Geopark. Geopark partners need to meet various requirements, including demonstrating commitment to the promotion of UNESCO Global Geoparks brand and Hong Kong Geopark, facilitating local engagement, promotion of sustainable tourism, and providing quality local products or geopark services that have a showcasing effect for the local communities and GGN. According to AFCD, Hong Kong Geopark does not take part in any commercial operation.

4.18 **Geopark hotels.** There are two geopark hotels in Hong Kong. According to AFCD, the engagement with the two geopark hotels has started since 2010 with partnership agreements signed in 2011 and 2018. According to the agreements, the hotels are required to, among others, display or exhibit at prominent places of science popularisation and Hong Kong Geopark messages, ensure that staff members in charge of the programme undertake geopark familiarisation training, provide or support products for promoting geopark branding, and facilitate the promotion and operation of tours led by geopark guides recommended by Hong Kong Geopark. Audit noted the following issues:

- (a) ***Inspections of geopark hotels not conducted in accordance with required frequency.*** According to AFCD guidelines, inspections should be arranged and conducted at least twice a year to ensure that the operation and partnership arrangements are being followed. Audit noted that in September 2013 and November 2014, AFCD had conducted inspections of the two geopark hotels. However, no documentation was available showing that inspections had been conducted since December 2014 and up to August 2022 (Note 32). In Audit's view, to ensure compliance with the partnership agreements, AFCD needs to conduct inspections of the geopark hotels according to the frequency stipulated in the guidelines; and
- (b) ***Need to provide up-to-date information on websites.*** Audit noted that as of August 2022, the websites of the two geopark hotels did not show information about Hong Kong Geopark. In addition, the two geopark hotels had been operating as quarantine hotels since December 2020 and May 2022. Up to 26 September 2022, they did not serve non-quarantined guests. However, such information was not disclosed on the geopark website during the said periods. In Audit's view, AFCD needs to timely update information about the geopark hotels on the geopark website, and consider requesting the geopark hotels to promote Hong Kong Geopark on their websites.

4.19 ***Promotion with geopark partners.*** AFCD uses different channels for promoting Hong Kong Geopark, including maintaining a social media account for Hong Kong Geopark with promotional videos. Audit noted that two promotional videos, which included promotion of dishes with the names of the restaurants, had been uploaded to the social media account of Hong Kong Geopark in November 2014 and February 2016. These videos were still available for public viewing as of August 2022. Audit noted that these restaurants were no longer geopark partners and AFCD had removed their names from the geopark website. However, there was no disclaimer in the videos or in the posts of the social media account of Hong Kong Geopark stating this fact and that it would not take part in any commercial operation of the restaurants.

Note 32: *According to AFCD, during the epidemic since 2020 and up to 26 September 2022, the geopark hotels had from time to time operated as quarantine hotels and it was not feasible nor useful to conduct inspections in those periods.*

Other related issues

4.20 Upon enquiry, AFCD informed Audit in September and October 2022 that the two outdated promotional videos had been removed to avoid misunderstanding. In Audit's view, AFCD needs to specify clearly the relationships between Hong Kong Geopark and geopark partners in promotional materials and timely update the materials to reflect any changes.

Need to strengthen actions in organising networking activities

4.21 Hong Kong Geopark has formed sister relationships with other global geoparks. Under the arrangements, the geoparks organise regular mutual visits, knowledge exchange and cooperate in geoscientific research, management and training. As of June 2022, Hong Kong Geopark had formed relationships with eight sister geoparks.

4.22 According to AFCD guidelines, with a view to ensuring the quality of all the sister geopark arrangements, the effectiveness of sister agreements and cooperation arrangements are reviewed every 18 months in accordance with the principles of GGN, and either side in the sister arrangement may consider suspending the arrangement if there are no solid joint activities for a prolonged period. Audit noted that:

- (a) from 2017 to 2022 (up to July), Hong Kong Geopark had organised 1 to 23 activities (averaging 9 activities) with each of the 8 sister geoparks. For the sister geopark with only one joint activity held, there was a gap of about 5.5 years between the last two activities held in September 2016 and March 2022; and
- (b) no documentation was available showing that a review of the effectiveness of the sister geopark arrangements had been conducted in the five and a half year period.

4.23 In Audit's view, AFCD needs to strengthen actions in organising networking activities with sister geoparks and conduct regular reviews on the effectiveness of the sister geopark arrangements with proper documentation.

Audit recommendations

4.24 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **improve the evaluation procedures of promotional activities (e.g. conducting formal questionnaire surveys);**
- (b) **conduct inspections of the geopark hotels according to the frequency stipulated in the guidelines;**
- (c) **timely update information about the geopark hotels on the geopark website, and consider requesting the geopark hotels to promote Hong Kong Geopark on their websites;**
- (d) **specify clearly the relationships between Hong Kong Geopark and geopark partners in promotional materials and timely update the materials to reflect any changes; and**
- (e) **strengthen actions in organising networking activities with sister geoparks and conduct regular reviews on the effectiveness of the sister geopark arrangements with proper documentation.**

Response from the Government

4.25 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that regarding the recommendation in paragraph 4.24(d), AFCD will consider adding disclaimers for clear specification of relationships between Hong Kong Geopark and geopark partners in promotional materials, as appropriate, and update the promotional materials apart from those released through social media in due course.

Patrols and inspections

4.26 According to AFCD, the important geological sites in Hong Kong Geopark are within the boundaries of the existing country parks, special areas and marine parks, and hence under the protection of the Country Parks Ordinance and the Marine Parks Ordinance. The Ordinances and their regulations prohibit or control certain activities in these areas (Note 33), such as littering and camping. Enforcement actions may be taken against illegal activities under the legislations. According to AFCD records, from 2020 to 2022 (up to March), there were 474 enforcement cases on illegal activities in geosites of Hong Kong Geopark (Note 34).

4.27 AFCD conducts patrols and inspections in geosites of Hong Kong Geopark, including:

- (a) ***Routine patrols.*** According to AFCD guidelines, routine patrols of geosites are carried out to protect and manage the natural heritage and significant geological features within each geosite, as well as to ensure visitor safety and monitor the condition of the geopark visitor facilities. The patrols are jointly conducted by country park wardens and marine park wardens. The land-based and sea-based patrols are conducted in geosites mainly by the Country Parks Ranger Services Divisions and the Marine Parks Division respectively. The locations and frequency of patrols are laid down in the Patrol and Management Plan of Hong Kong Geopark (hereinafter referred to as the patrol plan). The frequency of patrols for each geosite ranges from daily to monthly; and

Note 33: *The areas designated as country parks, special areas or marine parks can be used for nature conservation, education and scientific research, and may be used for leisure and tourism activities as long as there is no adverse impact on the natural environment.*

Note 34: *Of these 474 cases, 315 (66%) were related to unauthorised entry of vehicles/bicycles, 122 (26%) were related to illegal camping, and the remaining 37 (8%) were related to other illegal activities (e.g. unauthorised entry of closed campsites). According to AFCD, as of March 2022, prosecution actions had been taken against 334 cases, of which the defendants of 269 cases had been convicted.*

- (b) ***Inspection of signage.*** The Geopark Division conducts inspections to check the condition of signages in Hong Kong Geopark. According to AFCD guidelines, a full inspection of all signage should be carried out twice a year.

Need to ensure that geosites are covered by routine patrols/inspections

4.28 According to AFCD guidelines, the patrol routes of the geopark wardens must cover all geosites of Hong Kong Geopark. Audit examined the patrol plan (revised in August 2018 and July 2022) and noted that two geosites (i.e. Kau Sai Chau and Yim Tin Tsai) were not included, contrary to the requirement. Upon enquiry, AFCD informed Audit in August and September 2022 that:

- (a) routine patrols were carried out in geological sites within country parks and marine parks, which focused on the important geological features and natural environment of the geopark (all within country parks and marine parks); and
- (b) while no routine patrols were conducted for geosites such as Kau Sai Chau and Yim Tin Tsai, which were outside the boundary of country parks and marine parks, it would monitor the general site condition simultaneously during inspection of signage or story rooms. The guidelines were promulgated before the two geosites were developed. AFCD was reviewing the guidelines (see also paras. 3.33(c) and 3.34) and would make revisions to reflect the changes.

4.29 Kau Sai Chau and Yim Tin Tsai are located within the areas of Hong Kong Geopark and promoted as geosites to the public. As AFCD is the management authority of Hong Kong Geopark, it needs to take measures to ensure that all geosites are covered by routine patrols and/or inspections as appropriate.

Patrols and inspections not conducted according to required frequency

4.30 According to AFCD guidelines, routine patrols should be carried out according to set schedules and routes. Audit compared the required and actual frequency of patrols and inspections conducted in 2020 and 2021, and noted the following issues:

- (a) ***Land-based patrol.*** According to the patrol plan (revised in August 2018), the land-based patrol covered 10 geosites with land-tour routes (i.e. the 12 geosites with land-tour routes excluding Kau Sai Chau and Yim Tin Tsai), and the required patrol frequency of each geosite ranged from daily to monthly. Audit noted that the number of land-based patrols conducted for 6 and 5 geosites in 2020 and 2021 respectively did not meet the required frequency, with the shortfall ranging from 4% to 46% (averaging 19%);
- (b) ***Sea-based patrol.*** According to the patrol plan (revised in August 2018), the sea-based patrol covered 4 geosites with land-tour routes and 7 geosites under the two boat-tour routes (i.e. total 11 geosites), and the required patrol frequency of each geosite ranged from daily to monthly. Audit noted that the number of sea-based patrols conducted for 9 geosites did not meet the required frequency in both 2020 and 2021, with the shortfall ranging from 12% to 98% (averaging 69%). According to AFCD, the lower than target patrol frequency in 2020 and 2021 (see also (a) above) was mainly due to temporary difficulty in manpower deployment during the COVID-19 epidemic when special working arrangements of the whole Government were in place from time to time; and
- (c) ***Inspection of signage.*** According to AFCD guidelines, a full inspection of all signage of Hong Kong Geopark should be carried out twice a year. Audit noted that the number of inspections conducted for 5 and 4 geosites (including Kau Sai Chau and geosites under the two boat-tour routes) in 2020 and 2021 respectively did not meet the required frequency of two inspections per year (i.e. actual frequency was one or nil per year). According to AFCD, the geosites under the two boat-tour routes were without proper piers. Given the difficulty to access these geosites and low usage of the signs, inspection to these geosites was given lower priority.

4.31 In Audit's view, AFCD needs to take measures to ensure that routine patrols of geosites and inspection of signage are conducted in accordance with the frequency stipulated in the guidelines.

Violation of codes and guidelines for visiting geopark

4.32 According to AFCD, in order to prevent inappropriate activities and promote safety in Hong Kong Geopark, various measures have been implemented,

including publishing a set of guidelines for visiting the geopark, installing on-site signages at geosites, producing banners to convey messages, and publicising these guidelines and messages on social media channels.

4.33 AFCD has posted the “Code for Visiting Geosites in Hong Kong” and installed warning signs at geosites, and publicised guidelines for visiting geopark on the geopark website. Audit conducted site visits to seven geosites with land-tour routes in the period from April to August 2022 and noted behaviours violating the code, guidelines and rules shown in warning signs, as follows:

- (a) ***Getting ashore geosite of core protection area.*** According to the code and the guidelines, visitors should avoid getting ashore islands and coastal areas without visitor facilities and suitable for boat trips only. Audit’s site visits found some visitors getting ashore a geosite classified as a core protection area with no visitor facilities provided (Bluff Head — see Photograph 11);

Photograph 11

Visitors getting ashore Bluff Head



Source: Photograph taken by Audit staff in August 2022

- (b) ***Litters not taken out of geosites.*** According to the code, visitors should keep the country side clean, generate as little waste as possible and take it out of the geopark (i.e. take your litter home). Audit’s site visits found that litters were left behind in geosites;

Other related issues

- (c) ***Camping outside designated campsites.*** According to the code, it is advised to camp (including tent-camping) only in designated campsites. Audit's site visits found that some visitors camped at geosites which were not designated campsites; and
- (d) ***Taking away organism from geosites.*** According to the warning sign installed, visitors should not take away any rock, fossil or organism. Audit's site visits found that visitors were collecting clams from a geosite.

4.34 In Audit's view, AFCD needs to continue to strengthen actions against inappropriate activities in geosites, including stepping up publicity and educational efforts.

Audit recommendations

4.35 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **take measures to ensure that all geosites are covered by routine patrols and/or inspections as appropriate;**
- (b) **take measures to ensure that routine patrols of geosites and inspection of signage are conducted in accordance with the frequency stipulated in the guidelines; and**
- (c) **continue to strengthen actions against inappropriate activities in geosites, including stepping up publicity and educational efforts.**

Response from the Government

4.36 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that:

- (a) AFCD has reviewed and updated the patrol routes and patrol frequencies of geosites within country parks and marine parks in July 2022 and has arranged patrols accordingly; and
- (b) for inspection of signage and geosites outside country parks and marine parks, AFCD is reviewing the inspection frequency in the guidelines taking into account accessibility and usage.

Safety issues

4.37 According to AFCD, visitor safety is of the highest priority at all times. AFCD has published “Hiking Safety Guidelines”, produced short videos of different series to promote hiking safety and promoted hiking safety and etiquette through various means (e.g. websites, social media channels and education programmes).

Need to keep under review safety incidents in geosites

4.38 According to AFCD, although it does not maintain official statistics on incidents involving injuries or deaths in Hong Kong Geopark, it always pays close attention to these incidents and would take follow-up action if necessary. To ascertain such statistics, Audit conducted research on media reports published in the period from 2020 to 2022 (up to June) and noted that:

- (a) there were a total of 27 incidents involving 18 injuries and 12 deaths in geosites of Hong Kong Geopark;
- (b) the number of deaths in 2020, 2021 and 2022 (up to June) was 5, 2 and 5 respectively; and
- (c) of the 27 incidents, 8 (30%) occurred in High Island (involving 6 deaths and 3 injuries) and 4 (15%) occurred in or along the hiking trail to Tai Long Wan (involving 2 deaths and 2 injuries).

4.39 Audit referred the 27 incidents (see para. 4.38) to AFCD for examination. In September 2022, AFCD informed Audit that it had checked the incidents and classified them into the following three categories:

Other related issues

- (a) 14 (52%) incidents happened outside officially maintained trails/visitation areas of both Hong Kong Geopark and country parks (including hiking on islands/coastal areas that AFCD had suggested to only observe from marine vessels);
- (b) 10 (37%) incidents were related to heat stroke or the victim's own body condition, and might not be related to the trail/facility of the site as high-risk locations; and
- (c) 3 (11%) incidents happened during water activities (e.g. swimming).

4.40 In Audit's view, to improve the safety for visitors, AFCD needs to keep under review safety incidents in Hong Kong Geopark, including analysing incidents involving injuries or deaths in the geopark (e.g. number and cause of incidents) and taking follow-up action as appropriate (e.g. stepping up publicity and educational efforts on hiking safety).

Scope for improving the provision of safety information to visitors

4.41 According to AFCD, basic information about the geo-routes, such as locations, attractions along the routes and their surroundings, trail distance, level of difficulty, hiking time and accessibility should be publicised in the key communication channels (including website, leaflets and information boards). With a view to assisting hikers in planning their trips ahead and choosing the appropriate routes according to their physical ability, experience, and health condition, AFCD has included on its Enjoy Hiking website trail difficulty level reference (i.e. levels I to V). In view of the hiking accidents in recent years, AFCD has also included high-risk locations with records of fatal and serious accidents in country parks on the Enjoy Hiking website. Audit noted that as of August 2022:

- (a) while AFCD included on the Enjoy Hiking website the list of high-risk locations in country parks (including four locations within geosites of Hong Kong Geopark as of August 2022) and the levels of difficulty of trails for hiking, the geopark website did not include similar information or link to the Enjoy Hiking website for accessing the relevant information;
- (b) the levels of difficulty of 9 (instead of 12) geo-trails were stated in a geopark leaflet published in April 2022;

- (c) there were inconsistencies between the levels of difficulty of 5 (out of 9) geo-trails stated in the geopark leaflet and those on the Enjoy Hiking website. For example, Lai Chi Wo Nature Trail was classified at level I (i.e. easiest) and level II on the Enjoy Hiking website and the geopark leaflet respectively; and
- (d) while trail distance and hiking time were stated in some of the information boards installed at the geosites, the level of difficulty was not stated in any of the information boards.

4.42 According to AFCD, hikers should avoid entering the high-risk locations posted on the Enjoy Hiking website. To improve the safety of visitors, AFCD needs to enhance the completeness and accuracy of geo-route information to visitors, including high-risk locations, level of difficulty, trail distance and hiking time.

Audit recommendations

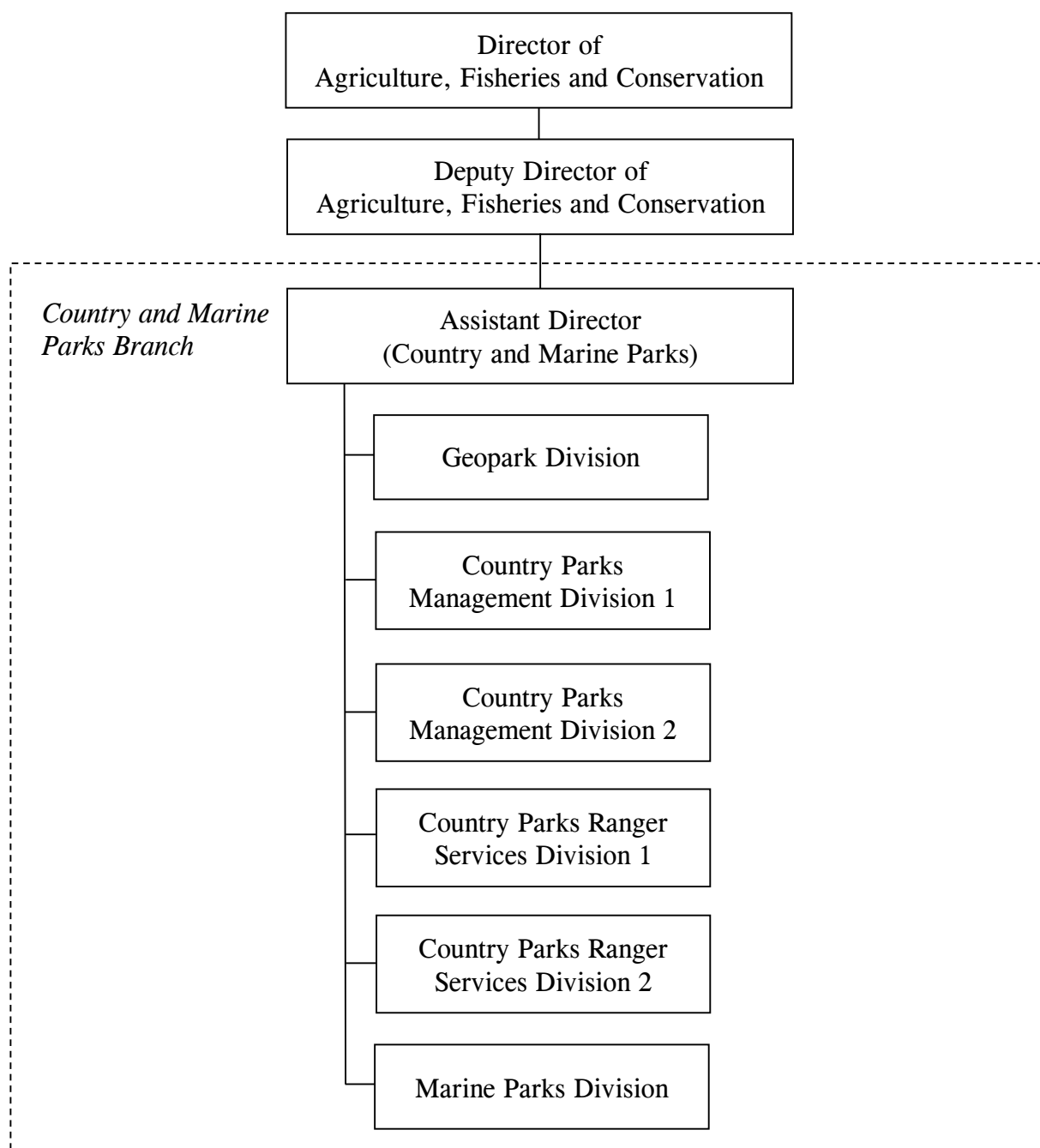
4.43 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **keep under review safety incidents in Hong Kong Geopark, including analysing incidents involving injuries or deaths in the geopark (e.g. number and cause of incidents) and taking follow-up action as appropriate (e.g. stepping up publicity and educational efforts on hiking safety); and**
- (b) **enhance the completeness and accuracy of geo-route information to visitors, including high-risk locations, level of difficulty, trail distance and hiking time.**

Response from the Government

4.44 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations and has said that AFCD will follow up accordingly.

**Agriculture, Fisheries and Conservation Department:
Organisation chart (extract)
(31 March 2022)**



Source: AFCD records

Remarks: Only the branch/divisions related to the operation and management of Hong Kong Geopark are shown.

Acronyms and abbreviations

A2G	Accredited Geopark Guide
AFCD	Agriculture, Fisheries and Conservation Department
ArchSD	Architectural Services Department
Audit	Audit Commission
GGN	Global Geoparks Network
GMB	Green minibus
NGO	Non-governmental organisation
QR code	Quick Response code
R2G	Recommended Geopark Guide
TC	Tourism Commission
TD	Transport Department
TIC	Travel Industry Council of Hong Kong
UNESCO	United Nations Educational, Scientific and Cultural Organization
WSD	Water Supplies Department