



ICAO

Second Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG/2)  
Virtual Meeting, 27 to 29 May 2020

**Agenda Item 4: Progress Update on Tasks assigned to States and International/Regional Organizations**

**WILDLIFE HAZARD MANAGEMENT SURVEY QUESTIONNAIRE**

(Presented by World Birdstrike Association)

**SUMMARY**

In response to Task 1/5, this paper presents the responses evoked to the questionnaire fielded from various countries of Asia Pacific region and the analysis there off along with the recommendations.

**1. INTRODUCTION**

1.1 Subsequent to the First Meeting of ICAO Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG/1), a questionnaire was forwarded to the States and Administrations in the region to assess the status of the wildlife management measures being adopted by the respective States. Responses were received from the following 10 States / Administration: Bangladesh, Brunei Darussalam, Cambodia, Hong Kong China, India, Indonesia, Pakistan, Philippines, Singapore and Thailand. Their responses were tabulated and analyzed.

1.2 In response to AP-WHM WG Task 1/5, this paper highlights the analysis and recommendations to the Working Group for further discussion and evolution of the processes. For the full responses and analysis of the survey questionnaire, please refer to **Attachment A** for responses from all States / Administration except India, and **Attachment B** for responses from India.

**2. DISCUSSIONS**

State Requirements

2.1 **Question 2:** Has the State established and implemented a process to mitigate against an increase or potential increase in wildlife strike hazard due to land use development likely to attract wildlife around an aerodrome?

2.1.1 **Analysis :** It has been found that some countries in the region have not established or put in place a process to check the increase and mitigate Wildlife Strike Hazards at their airfields with regards to land use and development that is likely to attract wildlife around the aerodrome

2.1.2 **Recommendation:** It is recommended that states:

- 2.1.2.1 Engage and shall establish a committee that will evaluate the land use and developments around respective aerodromes
- 2.1.2.2 Engage with city councils and respective builder associations to suggest suitable measures of forming a plan like regular cleaning, and awareness programs for all stakeholders to understand what the attractants are which cause the potential increase of wildlife

2.2 **Question 3:** Has the State developed industry guidance material to assist aerodrome operators to develop a wildlife (birds and animals) strike hazard study or assessment for each of their aerodromes?

2.2.1 **Analysis:** The responses to the survey indicate some countries lack industry guidance material to develop the necessary study or wildlife hazard assessment for their respective aerodromes.

2.2.2 **Recommendations:** It is recommended that :

2.2.2.1 Sufficient steps be taken to make available suitable material to help and assist aerodrome wildlife management teams that need to understand wildlife activity patterns and carry out timely assessments in order to prepare suitable wildlife management action plans to help mitigate wildlife strike risks at aerodromes.

2.2.2.2 States to ensure that all the airport accountable personnel and the WHM decision making chain shall undergo periodic and or refresher training to understand wildlife hazard management, as also the necessity of following a plan to conduct a study of wildlife in and around the airport at regular intervals. All training must be documented to ensure right personnel attendance.

2.2.2.3 It is important for Operators to regularly organise wildlife training programmes for Pilots and other relevant stakeholders.

2.2.2.4 It is recommended that ATC have a visual chart of high-risk species based on the wildlife study and patterns.

2.2.2.5 Establish a time frame for the regular wildlife surveys for e.g have a wildlife study every 2 years.

2.2.2.6 States to ensure seasonal wildlife assessment be done by the airport operator and the data collected be analysed to identify pattern changes and variations in wildlife behaviour

2.3 **Question 7:** Does the State use the IBIS database to report wildlife strikes?

2.3.1 **Analysis:** Most of the countries follow the procedure of reporting and forwarding wildlife strike reports to ICAO.

2.3.2 **Recommendation:** It is recommended that states

2.3.2.1 Shall establish a database of wildlife strikes which shall contain the relevant wildlife strike information. This database should be easily accessible by the states WHM stakeholders for analysis. It is recommended that a smart application be used instead of paper based forms and excel spreadsheets.

2.3.2.2 Shall ensure that respective country CAA shall collect all the aerodromes wildlife strike data of their respective aerodromes as and when they occur and forward the reports to ICAO on each occurrence.

2.3.2.3 Conduct regular analysis of the wildlife strike data with appropriate recommendations. Maintain a regular reporting process.

2.3.2.4 It is recommended states be given a login to view the strike data analysis and monitoring activity analysis regularly, if the airport operator is using a smart wildlife application. It is highly recommended, States and airport Operators use technology-based wildlife management applications.

2.4 **Question 8:** Has the State established a National wildlife strike hazards management committee forum including all relevant government organizations to discuss issues related to wildlife hazards on or in the vicinity of an aerodrome(s)?

2.4.1 **Analysis:** It is observed that most states have not established a National Wildlife Strike Hazard committee or Forum of different stakeholders including governmental organisations to discuss various issues with respect to wildlife strike hazards at and around aerodromes.

2.4.2 **Recommendations:** It is recommended that sates

2.4.2.1 Shall establish a national Wildlife Strike Hazard Committee Forum (WSHC) which shall comprise all concerned airline, airport air side safety stakeholders, ATC, WHM representatives, concerned State governmental organisations and national wildlife associations.

2.4.2.2 WSHC should meet every quarter to carry out an assessment of the environment both within and surrounding (13km) range around the aerodrome. The Governmental organizations and agencies shall be sensitized from time to time by the aerodrome operator regarding the importance and dangers of wildlife strikes and the necessity of a unified effort in the management of the environment surrounding aerodromes.

2.4.2.3 Establish a Calendar of regular working group meetings with all the above stakeholders and maintain minutes and document actions to track the progress of the actions and activities undertaken.

2.4.2.4 Draft a Term of Reference which is to be followed at each meeting

2.4.2.4.1 Terms of Reference Template

- a) Title
- b) Time and Frequency
- c) Objectives and Description
- d) Reporting Line
- e) Chairperson
- f) Secretariat
- g) Forum Composition
- h) Members roles and responsibilities
- i) Agenda
- j) Minutes
- k) Quorum
- l) Apologies

- 2.4.2.5 States established Wildlife Strike Hazard Committee Forum (WSHC) members must be easily accessible to discuss wildlife issues.

2.5 **Question 9:** Has the State established a national wildlife strike hazard reduction action plan/program to reduce the hazard of wildlife strikes?

2.5.1 **Analysis:** The responses to the survey shows that some countries have not established a National Wildlife strike hazard reduction action program or action plan.

2.5.2 **Recommendation:** It is recommended that sates

2.5.2.1 The WHSC shall work out a wildlife strike hazard reduction program or action plan based on the environmental conditions of each aerodrome.

2.5.2.2 The wildlife patterns analysis and reports must be clear and shared with all stakeholders with details of action plans

2.5.2.3 The Wildlife Strike hazard reduction program or action plan must not be stereotyped with one aerodrome working it out to apply to all the other aerodromes of the state. It should be noted that no two aerodromes in a state will have the identical habitat and environment to the last detail. Each airport must work towards implementing an electronic wildlife monitoring system and stay away from paper-based forms and excel spreadsheets, all wildlife activity monitoring information must be readily available on smartphones or tablets or desktops electronically.

2.5.2.4 Each aerodrome shall workout its own wildlife strike hazard reduction action plan or program.

2.6 **Question 12:** Is the wildlife hazard management plan, a part of the aerodrome certification/licensing requirements?

2.6.1 **Analysis:** The responses to the survey shows that in most countries wildlife hazard management plan is not a part of aerodrome certification/ licensing requirement.

2.6.2 **Recommendation:** It is recommended that sates

2.6.2.1 That have not made wildlife hazard management plan a part of aerodrome certification/ licensing requirement must incorporate it into the aerodrome certification/ licensing requirement and ensure that the wildlife hazard management plan is implemented in the true spirit.

2.6.2.2 Must be responsible to establish a Wildlife Strike Hazard Committee Forum (WSHC)

2.6.2.3 Must validate the wildlife hazard action plans with airport operators.

2.7 **Question 17:** Does the aerodrome operator participate in a national wildlife hazard reduction program?

2.7.1 **Analysis:** The responses show that most states do not have a national wildlife hazard reduction program.

2.7.2 **Recommendation:** It is recommended that sates

2.7.2.1 Shall create a National Wildlife Hazard Reduction Program and ensure its implementation.

- 2.7.2.2 Periodic (preferably 6 monthly /Annual) inspections on the correct implementation of the wildlife hazard reduction program should be made at each aerodrome by the state authorities.
- 2.7.2.3 Relevant validation must be agreed with the Airport operators
  
- 2.8 **Question 19:** Does the aerodrome operator use particular zoning of aerodrome surroundings in WHM Program?
  - 2.8.1 **Analysis:** While the responses show that some states have used zoning of surroundings of airports to identify general locations most have not created any clear demarcations.
  - 2.8.2 **Recommendation:**
    - 2.8.2.1 Airports must be able to identify the zones and areas in and around the airfield and must follow the ICAO format of zoning and naming of all surrounding areas
    - 2.8.2.2 Identification of surroundings is vital when monitoring wildlife activity to identify the attractants to wildlife in the particular area
  
- 2.9 **Question 20:** Does the aerodrome operator demonstrate a safety risk-based approach for wildlife hazard management?
  - 2.9.1 **Analysis:** Responses indicate that most of the states have aerodrome safety risk-based approaches to wildlife hazard management. However, a few states have responded in the negative.
  - 2.9.2 **Recommendation:**
    - 2.9.2.1 All airport operator WHM teams must adopt ICAOs Risk assessment as per doc 9859.
    - 2.9.2.2 A detailed Safety management plan must be adopted and followed
    - 2.9.2.3 Regular checks of the SMS plan with regulators is to be established
    - 2.9.2.4 Timing of regular checks must be established well ahead of time
  
- 2.10 **Question 22:** Has the aerodrome operator employed competent manpower for wildlife management at the airport?
  - 2.10.1 **Analysis:** Most states have responded in the affirmative. However, a few states need to take cognizance of the issue.
  - 2.10.2 **Recommendation**
    - 2.10.2.1 A qualified trained and equipped bird/wildlife controller should be present on the airfield for at least 15 minutes prior to any aircraft departure or arrival. Thus, if aircraft are landing or taking off at intervals of less than 15 minutes there should be continuous presence on the airfield throughout daylight hours. The controller shall not be required to undertake any duties other than bird control during this time. Note that for aerodromes with infrequent aircraft movements, 15 minutes may not be long enough to disperse all hazardous birds/wildlife from the vicinity of the runway. In this case the controller should be deployed sufficiently in advance of the aircraft movement to allow full dispersal to be achieved

- 2.10.2.2 At night, active runways and taxiways should be checked for the presence of birds/wildlife at regular intervals and dispersal action taken as needed.
  - 2.10.2.3 WLC resources must undergo refresher training from time to time to be kept updated with all regulations and on-going and new activities.
  - 2.10.2.4 The detailed role and responsibilities description of the activities must be available
- 2.11 **Question 23:** Has an airfield environment management committee been established at the aerodrome and are meetings conducted regularly?
- 2.11.1 **Analysis:** Most states have responded in the affirmative. However, a few states need to take cognisance of the issue.
  - 2.11.2 **Recommendation**
    - 2.11.2.1 A wildlife working group must be established with members of the senior management team at the airport and should be responsible for implementation of bird control programmes, including both habitat management and active and passive bird control.
    - 2.11.2.2 The working group shall meet every quarter to discuss the observations and actions being taken to mitigate wildlife activity
    - 2.11.2.3 The working group members will have access to wildlife control reports daily or weekly basis.
    - 2.11.2.4 A technology-based reporting module is essential, with drill down functionality to enable report users to analyse and understand any dependencies toward wildlife management
    - 2.11.2.5 Agenda and action plans arising from the meetings must be documented with timelines.
- 2.12 **Question 24:** Does the aerodrome operator review and communicate wildlife strike hazards to airlines and relevant stakeholders?
- 2.12.1 **Analysis:** Although many states have confirmed their action of communicating wildlife strike hazards to airlines and relevant stakeholders there seems to be a lack of communication standards
  - 2.12.2 **Recommendation**
    - 2.12.2.1 Communication between the various stakeholder groups and organisations on an on-going basis from the airport is essential if good bird/wildlife control standards are to be achieved.
    - 2.12.2.2 Airfield Operations, Grounds Maintenance, Air Traffic Control, Airport Fire Service, Airport Planners, Airlines etc. all have a role to play in identifying and correcting problems that may occur. Airport management shall ensure that a mechanism is available (e.g. an airport wildlife strike prevention committee) which enables these organisations to participate in the bird/wildlife hazard management process and ensure communications between the various agencies.
    - 2.12.2.3 Define a standard reporting template which can be followed by for States, Airport operators and other various stakeholder groups

2.13           **Question 25:**           Does the wildlife management program specify how often an aerodrome operator should inspect in and around the aerodrome to identify the sources of wildlife/bird attraction?

2.13.1       **Analysis:**           Majority of the states responded that there is no specific time schedule is being followed by the aerodrome operators to inspect around aerodromes to identify the sources of wildlife attractants.

2.13.2       **Recommendation**

2.13.2.1     Activity monitoring should be done at least twice dawn and dusk, however if the aerodrome has several attractants, bird counts and wildlife surveys must be done 3 to 4 times or at regular intervals.

2.13.2.2     Airport bird/wildlife controllers should record the following at least every 30 minutes (if air traffic is sufficiently infrequent that bird patrols are more than 30 minutes apart, an entry should be made for each patrol carried out).

2.13.2.3     areas of the airport patrolled, such as zone or chainage numbers

2.13.2.4     Bird numbers, location and species of birds/wildlife seen,

2.13.2.5     action taken to disperse the birds/wildlife,

2.13.2.6     results of the action taken

2.13.2.7     Planned actions based on observations

2.13.2.8     Risk assessment plan

2.13.3       More general information such as the name of the bird controller on duty, time on and off duty, weather conditions etc should be recorded at the start of a duty period.

2.13.4       All logged information must be technology (preferably) based and easily accessed

2.14           **Question 26:**           Is inspection being carried out to monitor illegal slaughtering within the ten kilo-meter radius of the aerodrome?

2.14.1       **Analysis:**           Responses indicate that most airports carry out inspections to monitor slaughtering houses within the 10 Km radius with a few airports who have reported that they have no inspections.

2.14.2       **Recommendation**

2.14.2.1     Airports should conduct an inventory of bird/wildlife attracting sites within the ICAO defined 13 km range, paying particular attention to sites close to the airfield and the approach and departure corridors.

2.14.2.2     A basic risk assessment should be carried out to determine whether the movement patterns of birds/wildlife attracted to these sites means that they cause, or may cause, a risk to air traffic. If this is the case, options for wildlife management at the site(s)concerned should be developed and a more detailed risk assessment performed to determine if it is possible and/or cost effective to implement management processes at the site(s) concerned. For e.g taking actions on a water body or fixing a fence, and covering open drains etc.

2.14.2.3     This process should be repeated annually to identify new sites or changes in the risk levels produced by existing sites. Wildlife control team must inspect these attractants and conduct repairs or bring them to the attention of working group if there is a capital works requirement.

- 2.14.2.4 Where national laws permit, airports, or airport authorities, should seek to have an input into planning decisions and land use practices within the 13km bird circle for any development that may attract significant numbers of hazardous birds/wildlife. Such developments should be subjected to a similar risk assessment process as described above and changes sought, or the proposal opposed, if a significant increase in Wildlife strike risk is likely to result.

2.15 **Question 28:** Does the aerodrome operator submit an annual report on Wildlife hazard management to CAA/DGCA?

2.15.1 **Analysis:** Most responses indicate there is no submission of an annual report on Wildlife Hazard Management to their respective CAA/ DGCA.

2.15.2 **Recommendation:**

2.15.2.1 A standard report template format must be established to make it easier for states to follow the report

2.15.2.2 Annual Report timeline should be established

2.15.2.3 All airports from the country or region must follow the standard format

#### Safety Risk Assessment of Wildlife (Bird/Animal) Strike

2.16 **Question 29:** Has the aerodrome operator documented safety risk assessment processes using strike data for each species?

2.16.1 **Analysis:** Half the responses have been positive to say that the aerodrome operator documented safety risk assessment processes using strike data for each species.

2.16.2 **Recommendation:**

2.16.2.1 Risk assessment processes validation and actions plans

2.16.2.2 Action plans must be clear and address the risk at hand

2.16.2.3 Action plans must be monitored and be verified and validated by authorised regulatory authorities.

2.17 **Question 31:** Does the aerodrome operator use a DNA based species identification procedure?

2.17.1 **Analysis:** Most states have responded saying they do not use DNA for the species identification.

2.17.2 **Recommendation:**

2.17.2.1 DNA analysis and identification is an important aspect of wildlife management

2.17.2.2 Museums will need to be engaged in this process

2.17.2.3 Associations and Museums must be in the wildlife management stakeholder working group and committees.

2.18 **Question 33:** Does the aerodrome operator use any other species identification procedures?

- 2.18.1 **Analysis:** All states barring one have stated that they do not have any other form of identification process.
- 2.18.2 **Recommendation:**
  - 2.18.2.1 Trained Wildlife resources must understand species identification process
  
- 2.19 **Question 34:** Does the aerodrome operator have wildlife management related Safety management systems (SMS) in place?
  - 2.19.1 **Analysis:** Half the state operators have indicated that they have a SMS system in place.
  - 2.19.2 **Recommendation:**
    - 2.19.2.1 SMS plans must follow the ICAO framework - and detail components of SMS
      - 2.19.2.1.1 Safety Policy and Objectives
      - 2.19.2.1.2 Safety risk management
      - 2.19.2.1.3 Safety Assurance
      - 2.19.2.1.4 Safety Promotion
    - 2.19.2.2 Understand (WIIFY) - what's in it for you?
    - 2.19.2.3 Understand reduction in the direct cost of incidents, aircraft and components damage, aircraft recovery and lost time in injuries
    - 2.19.2.4 Understand reduction in direct costs such as insurance, business reputation and benchmark of airports
    - 2.19.2.5 Understand the role of human factors in an SMS
  
- 2.20 **Question 35:** Can aerodrome operators calculate the probability of wildlife strike based on activity and number of flights?
  - 2.20.1 **Analysis:** Most states have indicated their inability to calculate the strike probability based on the wildlife activity and flight movements.
  - 2.20.2 **Recommendation:**
    - 2.20.2.1 Probability analysis based on wildlife strikes, wildlife activity and flight movements analysis are extremely beneficial
    - 2.20.2.2 To explore and adopt a smart application to enable probability analysis
    - 2.20.2.3 Fore thought and analysis will provide better management of risk wildlife strikes
    - 2.20.2.4 Reduces the risk of wildlife strikes
  
- 2.21 **Question 36:** Are wildlife strike hazard assessments being carried out by specialists?
  - 2.21.1 **Analysis:** The responses from most of the states has been that they utilise specialists to carry out the wildlife strike assessments.
  - 2.21.2 **Recommendation**

- 2.21.2.1 Wildlife Hazard Assessments must be carried out by trained professionals who understand a range of activities and situations, who understands the ecology and wildlife behaviour and someone who likes to be outdoors.
- 2.21.2.2 Observe wildlife in areas and what it appears to be attracted to
- 2.21.2.3 Observe wildlife such as feeding, nesting, resting, foraging for carcasses or insects
- 2.21.2.4 Observer habitat conditions such as grass levels, trees, fences and FOD

2.22 **Question 37:** Does the aerodrome operator manage wildlife strike hazards in accordance with safety risk assessments conducted by a relevant expert?

2.22.1 **Analysis:** Majority of the states have indicated that they do not have the relevant expert to manage wildlife strike hazards in accordance with safety risk assessments.

2.22.2 **Recommendation**

2.22.2.1 The Risk assessment should involve a trained wildlife specialist who is familiar with ecology and wildlife management and behaviour

2.22.2.2 The root cause of wildlife hazards must be identified for each species, audit of surrounding areas to determine how the different habitats may aid the species and eliminating them or providing a work around to reduce the attractant in the habitat

2.23 **Question 38:** Has an assessment of wildlife strike hazard outside the aerodrome been undertaken?

2.23.1 **Analysis:** Majority of the states have indicated that they have not undertaken an assessment of wildlife strike hazards outside of the aerodrome.

2.23.2 **Recommendation**

2.23.2.1 Wildlife assessment outside the aerodrome is highly recommended.

2.23.2.2 Understand the kind of environment outside the aerodrome

2.23.2.3 Ensure that open drains and sewage, garbage dumps must be covered by working along with local councils

2.23.2.4 Ensure open butcheries must operate with care and as much as possible educate them on the risk of attracting wildlife

2.23.2.5 Wildlife teams must be fully aware of all environmental issues and how they can contribute to the sustainability policy at airports

Wildlife Prevention Measures inside and outside Aerodrome

2.24 **Question 39:** Does the aerodrome operator have a procedure in place to identify source of wildlife attractants in the vicinity of aerodrome such as slaughterhouses, Slum clusters, garbage dump, illegal abattoirs, unauthorized piggeries, dairy farms, de-skinning in the open area, water stagnation, landfill, ponds, drainages, agriculture, stream, forest shrub areas and abandoned structures etc.?

2.24.1 **Analysis:** Most of the responses indicate that their state aerodromes have a procedure in place to identify the source of wildlife attractants in the vicinity of aerodrome such as slaughterhouses, Slum clusters, garbage dump, illegal abattoirs, unauthorized piggeries, dairy farms, de-skinning in the open area, water stagnation,

landfill, ponds, drainages, agriculture, stream, forest shrub areas and abandoned structures etc.

2.24.2 **Recommendation**

2.24.2.1 Ensure that the wildlife control team works together with local councils and authorities to close or reduce the attractants.

2.24.2.2 Sensitise the local administration and government actors about the risks of a wildlife strike and involve the concerned authorities in meetings.

2.25 **Question 42:** Are ecological measures implemented to limit or reduce wildlife attractiveness at the airport and in the vicinity?

2.25.1 **Analysis:** Half the states have responded saying they do not have ecological measures implemented to limit or reduce wildlife attractiveness at the airport and in the vicinity.

2.25.2 **Recommendation**

2.25.2.1 Reducing the wildlife population in the Habitat in and around airfield must be a high priority

2.25.2.2 Reducing the presence of wildlife in aircrafts flight paths can be achieved by habitat management, dispersal methods or removal of hazardous wildlife.

2.26 **Question 44:** Does a process exist at the aerodrome to trap hazardous wildlife for distant release?

2.26.1 **Analysis:** Most of the states have indicated that they do not have a process at the aerodrome to trap hazardous wildlife for distant release.

2.26.2 **Recommendation**

2.26.2.1 It might not be feasible to change the habitat for wildlife behaviour, in such cases removal of wildlife maybe the only option

2.26.2.2 This will involve trapping and relocating wildlife, airport operators must be compliant with regulations and carry out removals as humane as possible

2.26.2.3 In some instances, coordinate with animal care and rescue authorities to carry out the removal.

2.27 **Question 45:** Does the aerodrome operator use any professional rescue groups in wildlife trapping and distant release?

2.27.1 **Analysis:** A majority of the states have responded positively to the question and have stated that the aerodrome operators use professional rescue groups in wildlife trapping and distant release.

2.27.2 **Recommendation**

2.27.2.1 Compliance with all regulations regarding wildlife species must be a priority

2.28           **Question 46:**           Does the aerodrome operator conduct pest management on the airfield and use chemicals for minimizing big insect (e.g. bird food species) activities and small mammals (e.g. rodents) activities?

2.28.1       **Analysis:**           The responses indicate that most states aerodromes conduct pest management on the airfield and use chemicals for minimizing big insect (e.g. bird food species) activities and small mammals (e.g. rodents) activities

2.28.2       **Recommendation**

2.28.2.1     Pesticides and Chemical repellents might be required to reduce attractants such as insects and small mammals

2.28.2.2     Use of Poisons and environmental pollutants must be avoided at all times

2.29           **Question 52:**           Does the aerodrome operator maintain a record of all wildlife activities?

2.29.1       **Analysis:**           The responses indicate that most states' aerodromes maintain a record of all wildlife activities.

2.29.2       **Recommendation:**

2.29.2.1     Keeping records of all activity related to wildlife hazard management is fundamental to the WHM program. Data is required in order to be able to assess the effectiveness of the WHM program and for continuous improvement. There is an increased tendency towards airlines and insurers to pursue legal actions to recover costs of wildlife strike damage from airports at which they occur. It is important that airports record wildlife control actions in order to demonstrate that they have an adequate functional WHM program. Therefore it is important to follow the recommendations below:

2.29.2.1.1   Records need to include time, location and nature of

- a) Each patrol or inspection taken
- b) Observation of condition of habitat
- c) Observation of vegetation
- d) Wildlife species sightings with details of activity
- e) Interventions which mitigate the activity
- f) Outcome of the intervention
- g) Response of wildlife and effectiveness of hazard elimination
- h) Wildlife sightings by pilots, airlines and ground staff to be easily reported
- i) All monitoring must be conducted using technology like a smart wildlife application
- j) Paper forms and spreadsheets must not be used for reporting activity.

2.30           **Question 56:**           Are wildlife control unit (WCU) personnel equipped with proven knowledge through education or training courses on wildlife identification?

2.30.1       **Analysis:**           About 50% have indicated that their WCU personnel are not adequately trained on wildlife identification

2.30.2 **Recommendation**

2.30.2.1 Aerodromes must adopt a targeted WHM training program which supports the role and responsibilities of all resources towards wildlife management

2.30.2.2 A blended learning approach must be adopted which includes E-learning, face to face, theory and practical training

2.30.2.3 Theoretical and E-learning Training must include

- a) Aerodrome Overview and Procedures
- b) ICAO requirements
- c) State standards
- d) Environmental regulations
- e) SMS
- f) Work, Health and Safety overview
- g) Accident and incident reporting and investigation (part of SMS)
- h) Regular refresher training

2.30.2.4 Specific Wildlife Training

- a) Habitat and wildlife programs
- b) Equipment training and procedural use of equipment
- c) Wildlife application software training
- d) Reporting and analysis to draw information for continuous improvement
- e) Regular refresher training

2.31 **Question 60:** Does the aerodrome operator have a wildlife dispersal report to monitor wildlife dispersal patterns?

2.31.1 **Analysis:** Responses indicate that most of the state aerodromes do not have a wildlife dispersal report to monitor wildlife dispersal patterns.

2.31.2 **Recommendation**

2.31.2.1 A wildlife dispersal report is vital in wildlife management

2.31.2.2 Understanding the species behaviour and plotting the pattern of dispersal is extremely beneficial and has high rates managing the species behaviour

2.32 **Question 61:** Does the aerodrome operator have live GPS activity reporting?

2.32.1 **Analysis:** All the states except one have responded stating they do not have a live GPS activity reporting system

2.32.2 **Recommendation**

2.32.2.1 In the current environment where we can get easy access to technology we must be able to adopt technology it is recommended that airports where possible must adopt smart applications like a live GPS activity system

2.33           **Question 62:**           Is the wildlife log completed at regular intervals by competent WCU personnel?

2.33.1       **Analysis:**           Responses indicate that only half the states have their wildlife log completed at regular intervals by competent WCU personnel

2.33.2       **Recommendation**

2.33.2.1     All airports must ensure they employ appropriate resources with right attitude and aptitude to be competent in being a wildlife resource

2.33.2.2     Wildlife activity monitoring and logging must be done at regular intervals which is to be agreed with management and regulator dependent on flight movements and wildlife presence

2.34           **Question 63:**           Does the aerodrome operator use technology to record wildlife activity?

2.34.1       **Analysis:**           The responses indicate that the majority of the states do not use technology while recording wildlife activity.

2.34.2       **Recommendation**

2.34.2.1     Data is the most vital asset, usability of smart technology like smart applications are highly recommended to plan future actions for wildlife hazard management

2.35           **Question 65:**           Does the aerodrome operator use technology to study wildlife activity patterns?

2.35.1       **Analysis:**           Responses indicate that most state airport do not use technology to study wildlife activity patterns.

2.35.2       **Recommendation**

2.35.2.1     Use of smart wildlife applications will help reduce wildlife strikes, better understanding of habitat to implement appropriate forms of repellents

2.35.2.2     Technology enable better capture of historical data, with real time analysis of wildlife and attractants

2.35.2.3     Understanding wildlife patterns, with accurate interventions

2.35.2.4     Technology helps provide stream of real time actionable insights to pilots and airport operators to enhance airside safety and reduce risk of potential wildlife strikes

2.36           **Question 66:**           Does the aerodrome operator maintain a dashboard of wildlife activity/pyrotechnics used?

2.36.1       **Analysis:**           The responses indicate that the majority of the states do not have a dashboard to read off wildlife activity / Pyrotechnics used.

2.36.2       **Recommendation**

2.36.2.1     Use of easy to read dashboards is extremely helpful

2.36.2.2 Intelligent analysis of recorded data will enable to plan and forecast future use of pyrotechnics for e.g which species respond to certain interventions such as pyrotechnics

2.37 **Question 67:** Can aerodrome operators calculate the probability of wildlife strike based on activity and number of flights?

2.37.1 **Analysis:** Most states have indicated their inability to calculate the strike probability based on the wildlife activity and flight movements.

2.37.2 **Recommendation:**

2.37.2.1 Probability analysis based on wildlife strikes, wildlife activity and flight movements analysis is extremely beneficial

2.37.2.2 Explore and adopt a smart application to enable probability analysis

2.37.2.3 Fore thought and analysis will provide better management of risk wildlife strikes

2.37.2.4 Reduce the risk of wildlife strikes

2.38 **Question 68:** Has the aerodrome operator established a system and process for reporting, recording, retrieving the data and analysing the wildlife strikes and wildlife strike hazard reports?

2.38.1 **Analysis:** Responses show that a majority of states aerodrome operators have not established a system and process for reporting, recording, retrieving the data and analysing the wildlife strikes and wildlife strike hazard reports.

2.38.2 **Recommendation**

2.38.2.1 Establishing a system to monitor, collect and analyse wildlife and Habitat is most vital in successful wildlife management.

2.38.2.2 Use of actionable data will aid in decision making

2.38.2.3 Develop sustainable best practices

2.38.2.4 Understanding how to use interventions such as deploying repellent devices, pyrotechnic and other resources with a positive outcome

2.39 **Question 69:** Have aerodrome operators developed mitigation steps in response to outcomes of the wildlife hazard analysis conducted?

2.39.1 **Analysis:** Responses show that a majority of states aerodrome operators have not developed mitigation steps in response to outcomes of the wildlife hazard analysis conducted.

2.39.2 **Recommendation**

2.39.2.1 This seems to be questionable if operators have adopted a wildlife hazard management program and a Safety management system, operators must have detailed action plans in response to the outcomes and manage risks with suitable appropriate mitigation plans

2.40 **Question 70:** Is wildlife strike data made available to assist other aerodromes in assessing potential new risks, trends and mitigation methods?

- 2.40.1 **Analysis:** Responses indicate that a majority of the state's wildlife strike data is not made available to assist other aerodromes in assessing potential new risks, trends and mitigation methods.
- 2.40.2 **Recommendation**
  - 2.40.2.1 Establishing a WHM working group
  - 2.40.2.2 Sharing of knowledge and practices must be easily available
  - 2.40.2.3 Delegates and participants must be approachable and responsive
  - 2.40.2.4 Cut out unnecessary protocols

#### Training

2.41 **Question 71:** Has the aerodrome operator provided formal training to all personnel prior to initial engagement as wildlife controllers?

- 2.41.1 **Analysis:** Responses indicate that a majority of the state's aerodrome operators have not provided formal training to all personnel prior to initial engagement as wildlife controllers.
- 2.41.2 **Recommendation**
  - 2.41.2.1 All aerodromes management must have detailed training plan Objectives
  - 2.41.2.2 Ensure training plan meets all international and National standards
  - 2.41.2.3 Ensure local Habitat, ecology and wildlife is covered in training
  - 2.41.2.4 Ensure software application training is included
  - 2.41.2.5 Provide refresher training

2.42 **Question 73:** Is the training commensurate with the specific wildlife hazard and size and complexity of the aerodrome operation?

- 2.42.1 **Analysis:** Responses indicate that a majority of the state's airports training is not commensurate with the specific wildlife hazard and size and complexity of the aerodrome operations.
- 2.42.2 **Recommendation**
  - 2.42.2.1 Refer to Question 71

2.43 **Question 74:** Is the training fully documented and records retained and available for inspection?

- 2.43.1 **Analysis:** Responses indicate that a majority of the state's airports training is not fully documented and records are not retained and available for inspection.
- 2.43.2 **Recommendation**
  - 2.43.2.1 Aerodromes must maintain documented training records
  - 2.43.2.2 Maintain reference training manuals which are easily accessible
  - 2.43.2.3 Manage refresher training and new resources training

2.44           **Question 75:**           Is the training provided by qualified aerodrome wildlife control personnel or specialists with proven experience in this field?

2.44.1       **Analysis:**           Responses indicate that a majority of the state's airports do not provide training by qualified aerodrome wildlife control personnel or specialists with proven experience in this field.

2.44.2       **Recommendation**

2.44.2.1     Training must be provided by qualified personnel such as ICAO, States regulators, and associations such as World Birdstrike association

2.45           **Question 76:**           Is feedback considered, and included where relevant and appropriate, in a process of continuous improvement?

2.45.1       **Analysis:**           Responses indicate that a majority of the state's airports do not have a system of taking and considering feed for continuous improvement.

2.45.2       **Recommendation**

2.45.2.1     Aerodromes must be able to adopt advised best practices

2.45.2.2     Aerodromes must consider adopting technology for continuous improvement, as in all industries automating many manual processes must be adopted for best outcomes for wildlife management

**3.           ACTION BY THE MEETING**

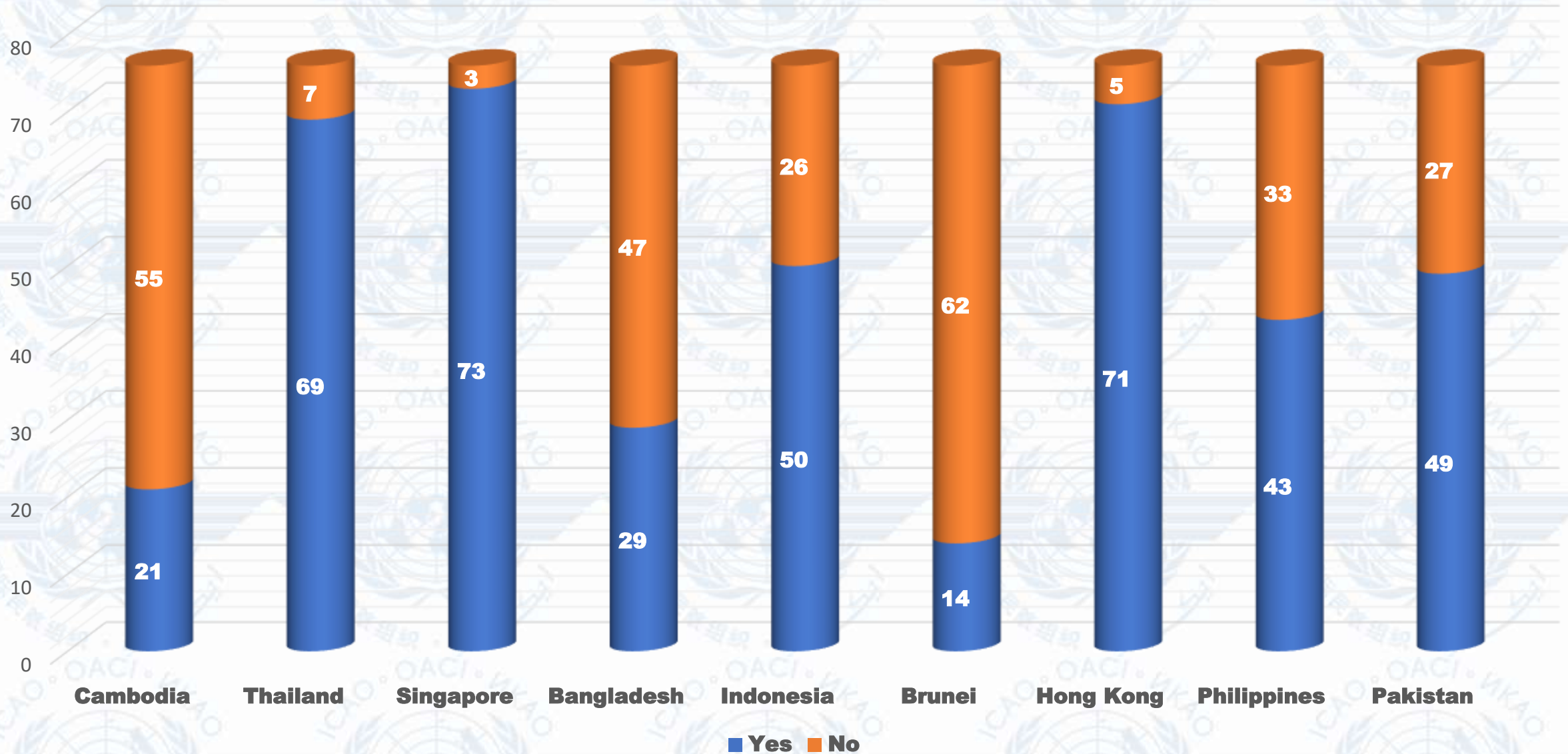
3.1           The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

\_\_\_\_\_

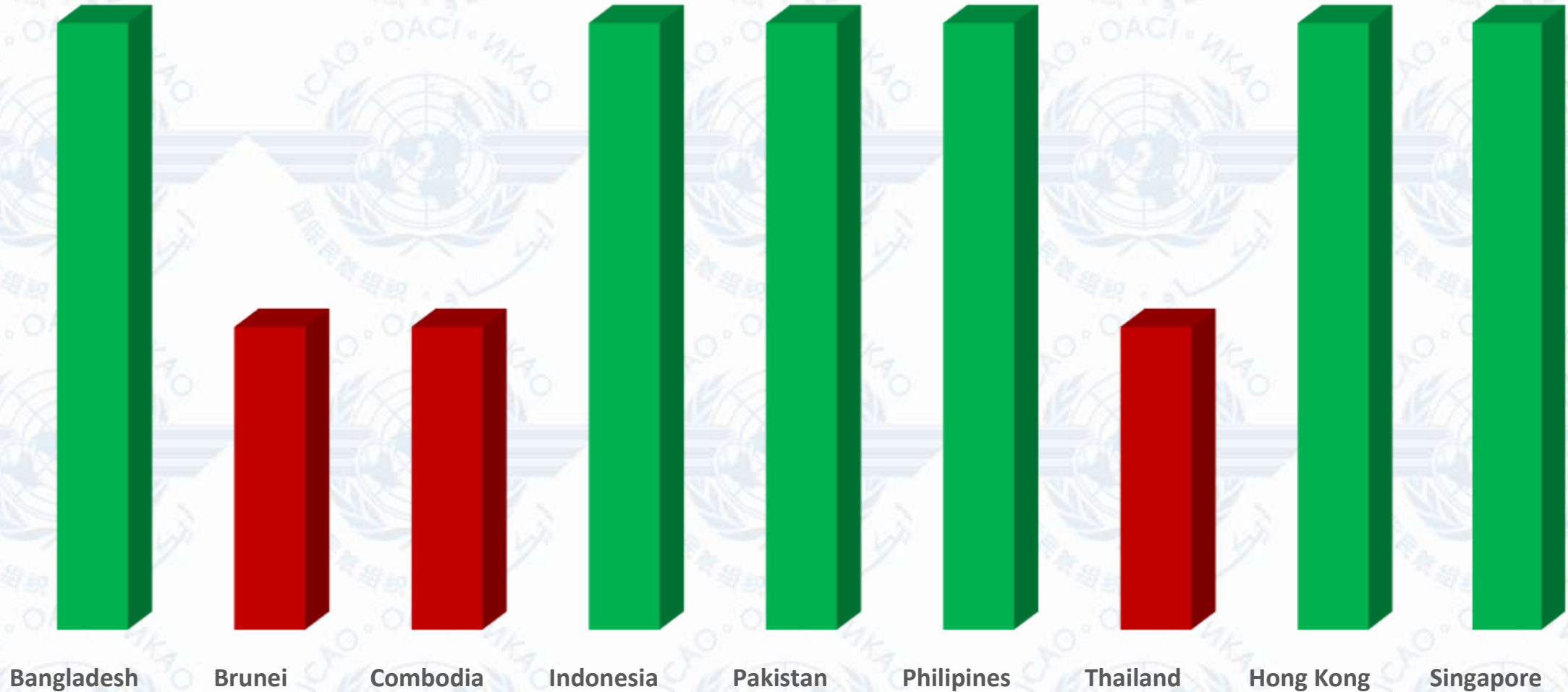
**ICAO ASIA/PACIFIC  
WILDLIFE HAZARD MANAGEMENT WORKING GROUP  
(AP-WHM WG/1)  
Responses to Questions  
Compiled by *World Birdstrike Association***

# Country Wise Responses to Questionnaire - Overview (AP- WHM WG/1)



## Response to Question - 2

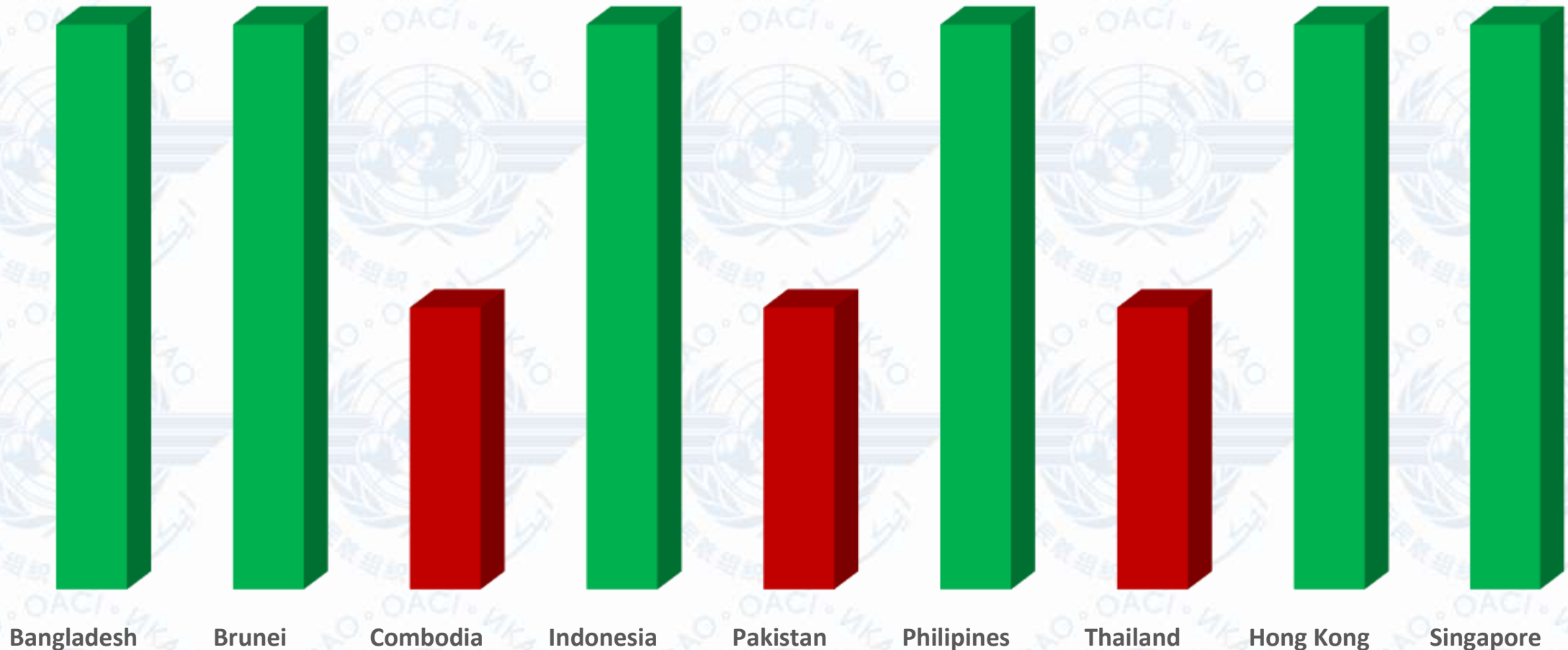
Has the State established and implemented a process to mitigate against an increase or potential increase in wildlife strike hazard due to land use development likely to attract wildlife around an aerodrome?



Response - NO. ; Yes

### Response to Question - 3

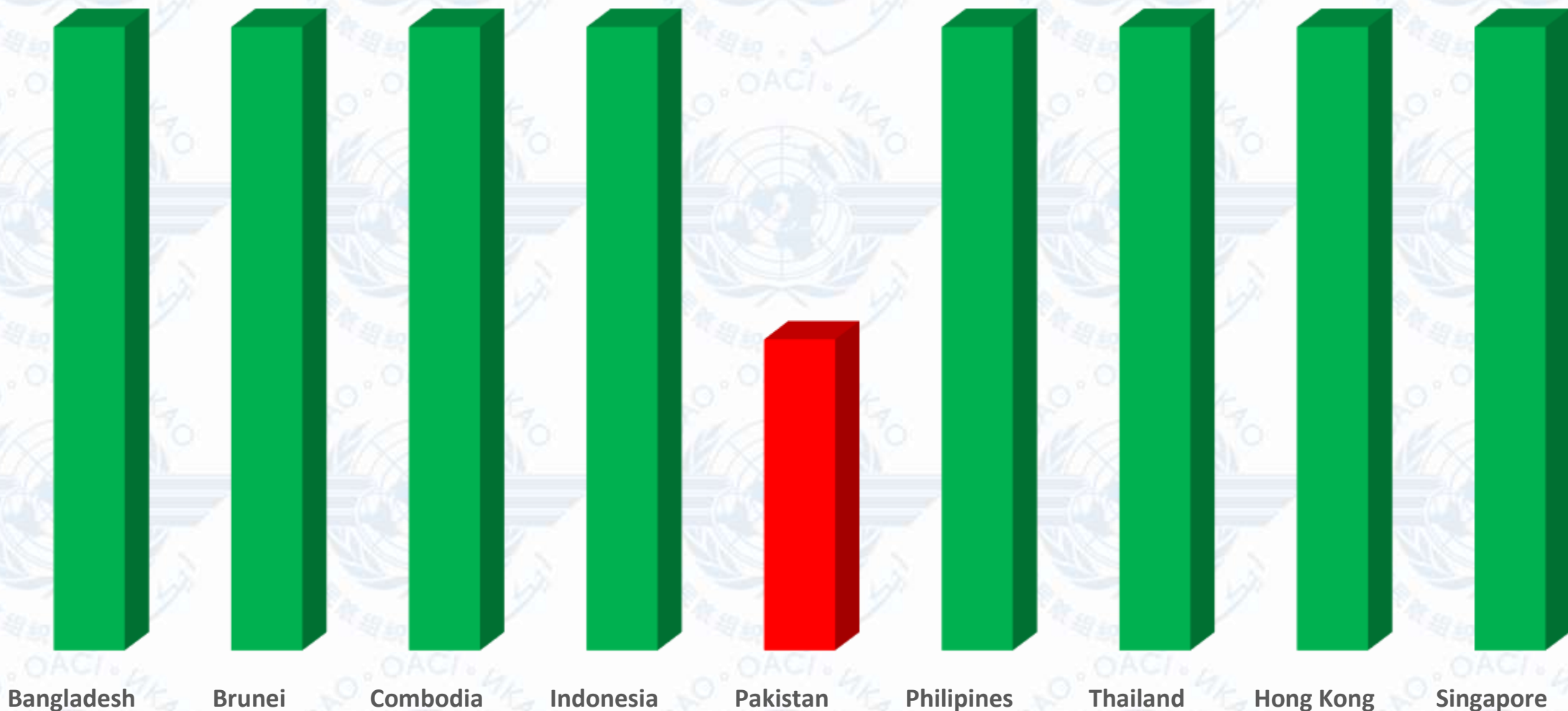
Has the State developed industry guidance material to assist aerodrome operators to develop a wildlife (birds and animals) strike hazard study or assessment for each of their aerodromes?



Response—NO ; Yes

## Response to Question - 4

Has the State promulgated regulations to require a wildlife (birds and animals) strike hazard study or assessment for each of its aerodromes?



Response – NO ; YES

# Response to Question - 6

Does the State collect and forward wildlife strike reports to ICAO?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

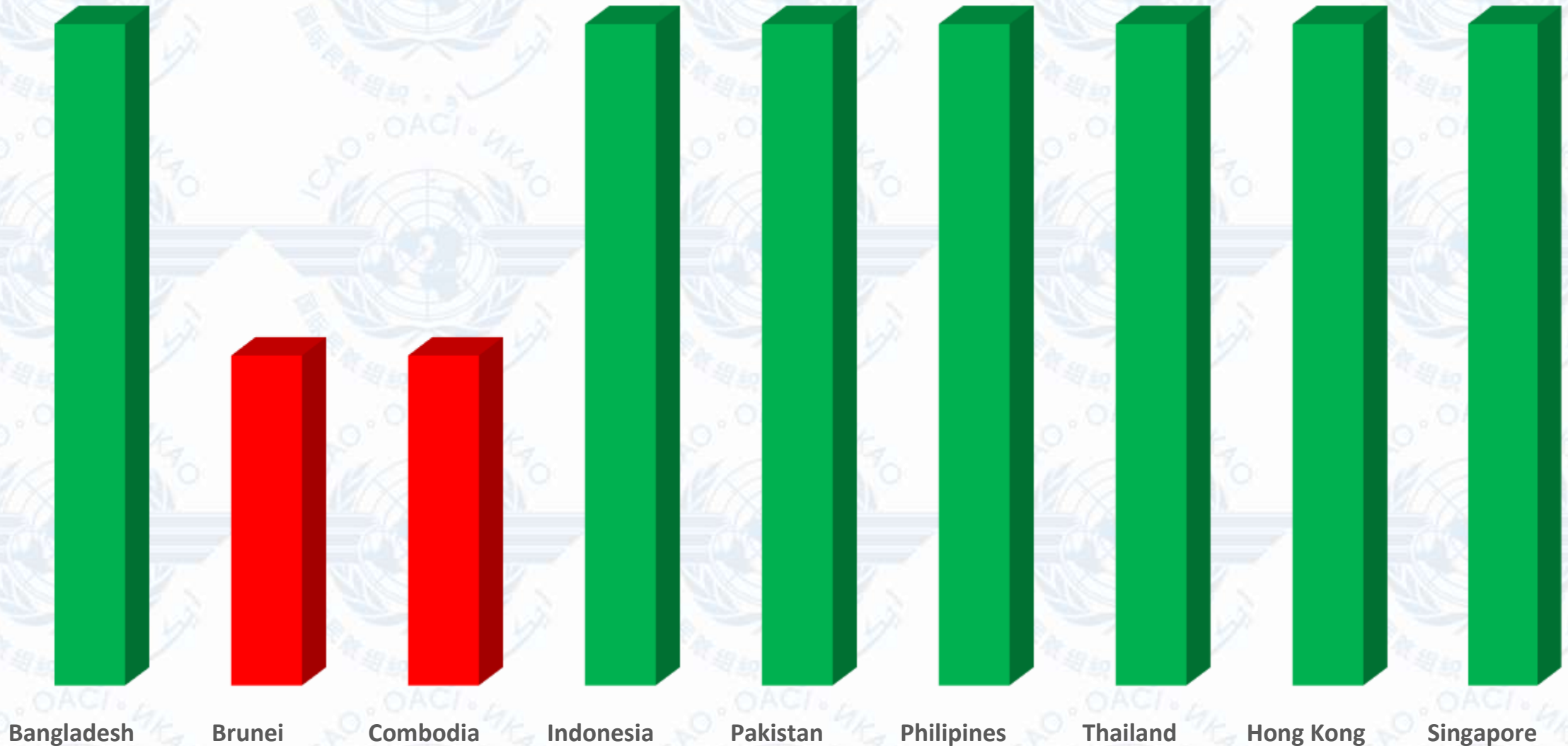
Hong Kong

Singapore

Response - NO ; Yes

## Response to Question - 7

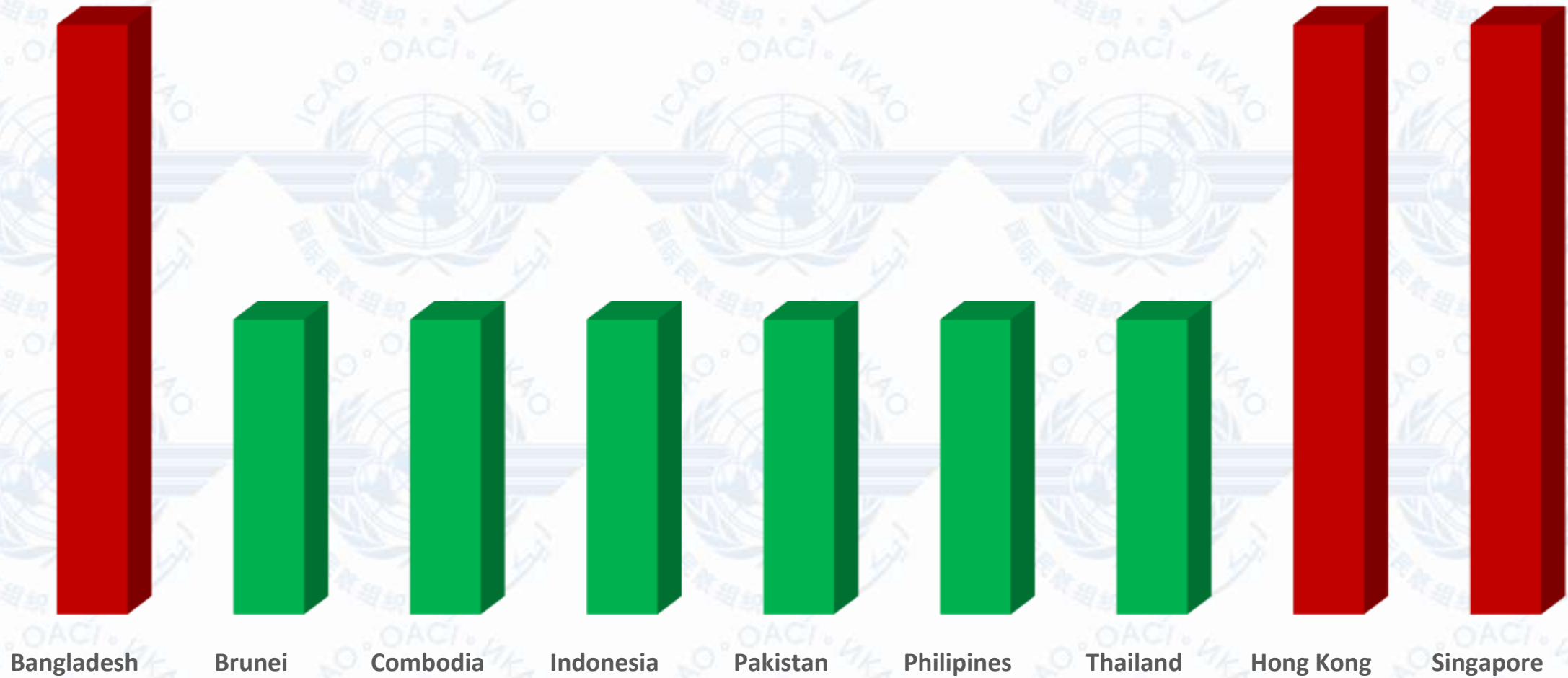
Does the State use the IBIS database to report wildlife strike?



Response – NO ; YES

## Response to Question - 8

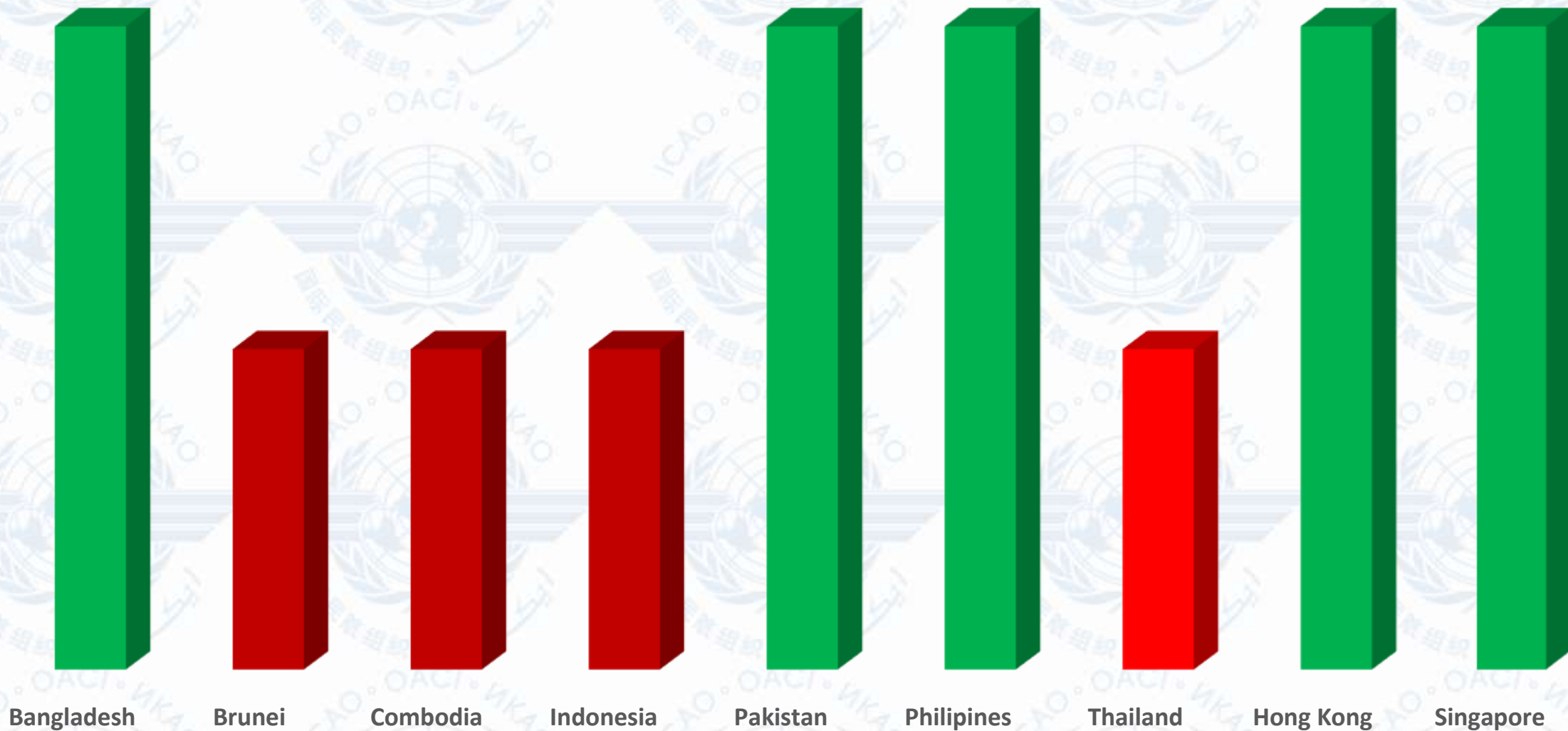
Has the State established National wildlife strike hazards management committee forum including all relevant government organizations to discuss issues related to wildlife hazards on or in the vicinity of an aerodrome(s)?



Response -NO ; YES

## Response to Question - 9

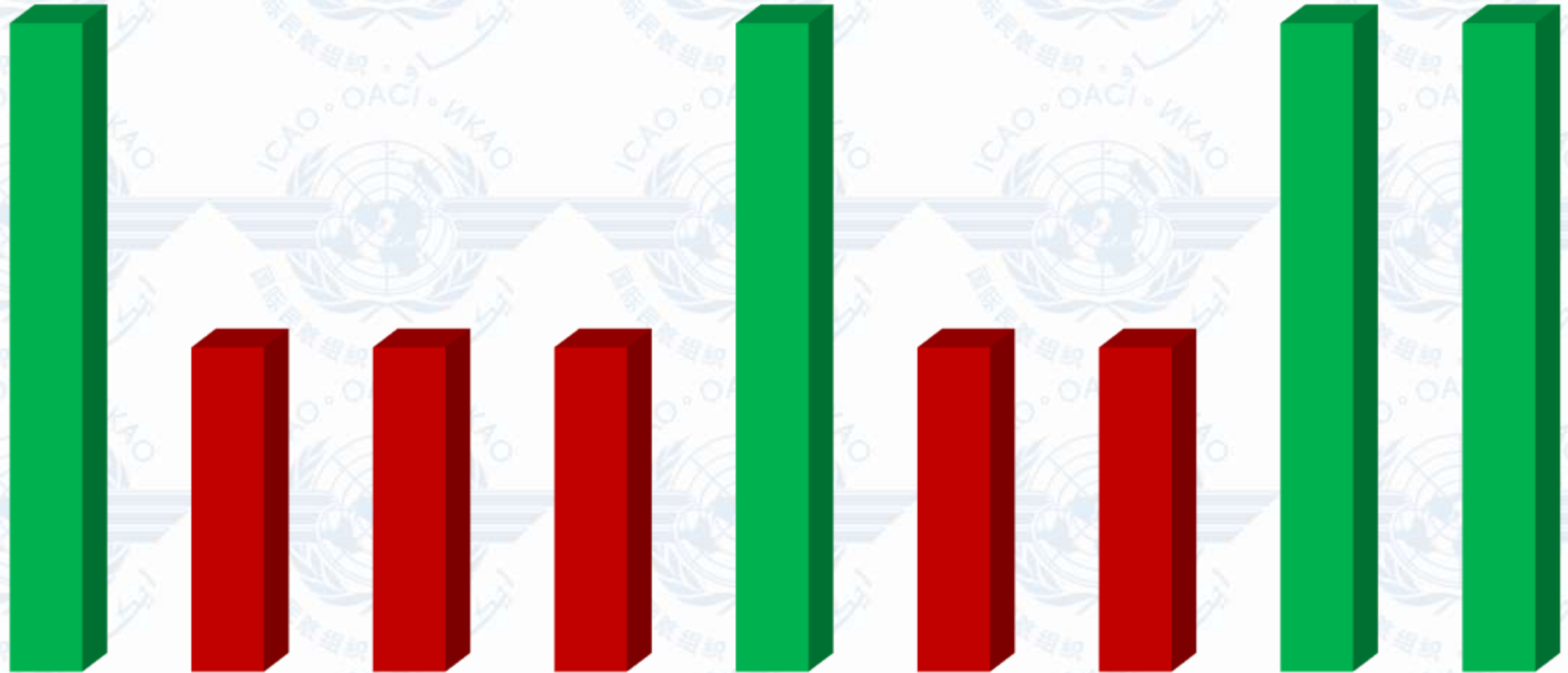
Has the State established national wildlife strike hazard reduction action plan/program to reduce the hazard of wildlife strikes?



Response -NO ; YES

## Response to Question - 12

Is the wildlife hazard management plan, a part of the aerodrome certification/licensing requirements?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

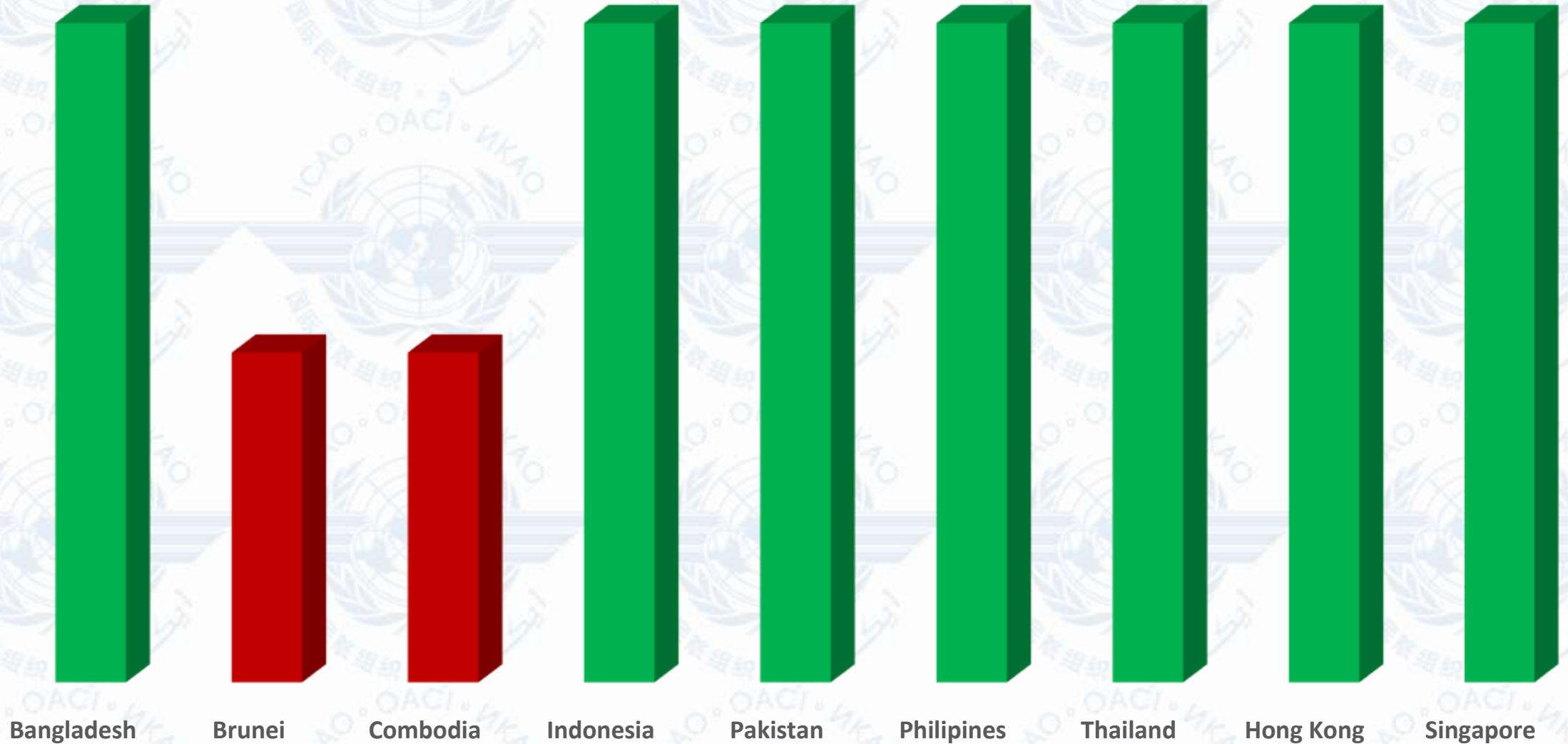
Hong Kong

Singapore

Response -NO ; YES

## Response to Question - 14

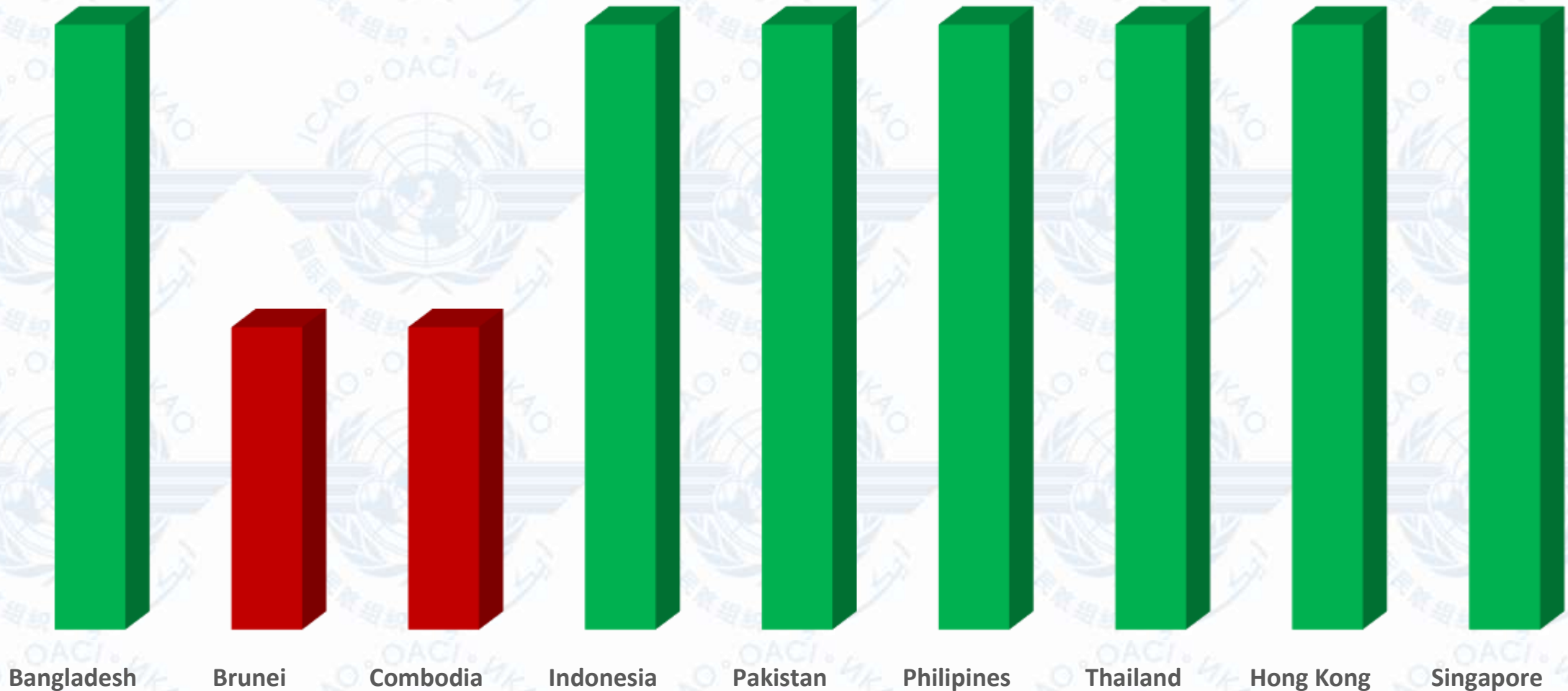
Has the aerodrome operator developed a habitat management programme of the airfield?



Response -NO ; YES

## Response to Question - 15

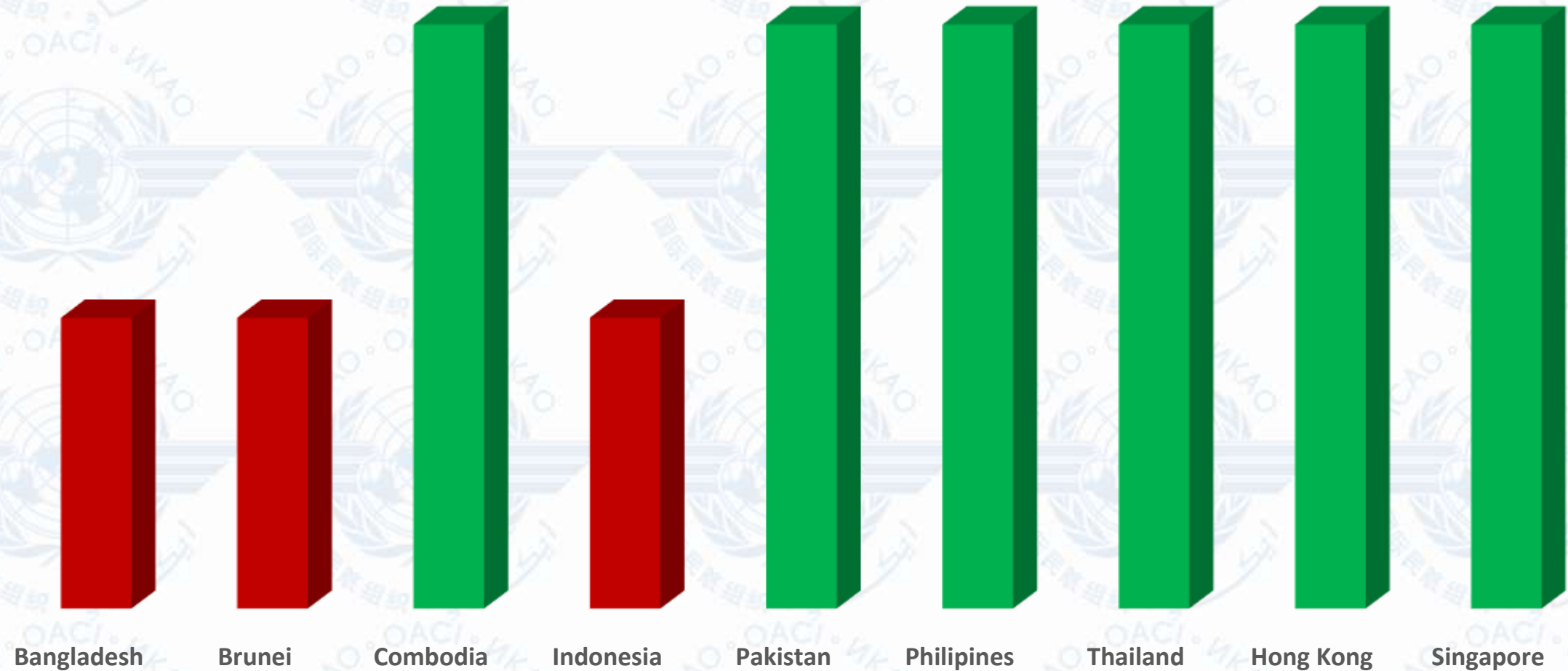
Does the aerodrome operator have or include a process for mitigation measures and their follow-up in the evaluation of the wildlife hazard management programme?



Response -NO ; YES

## Response to Question - 16

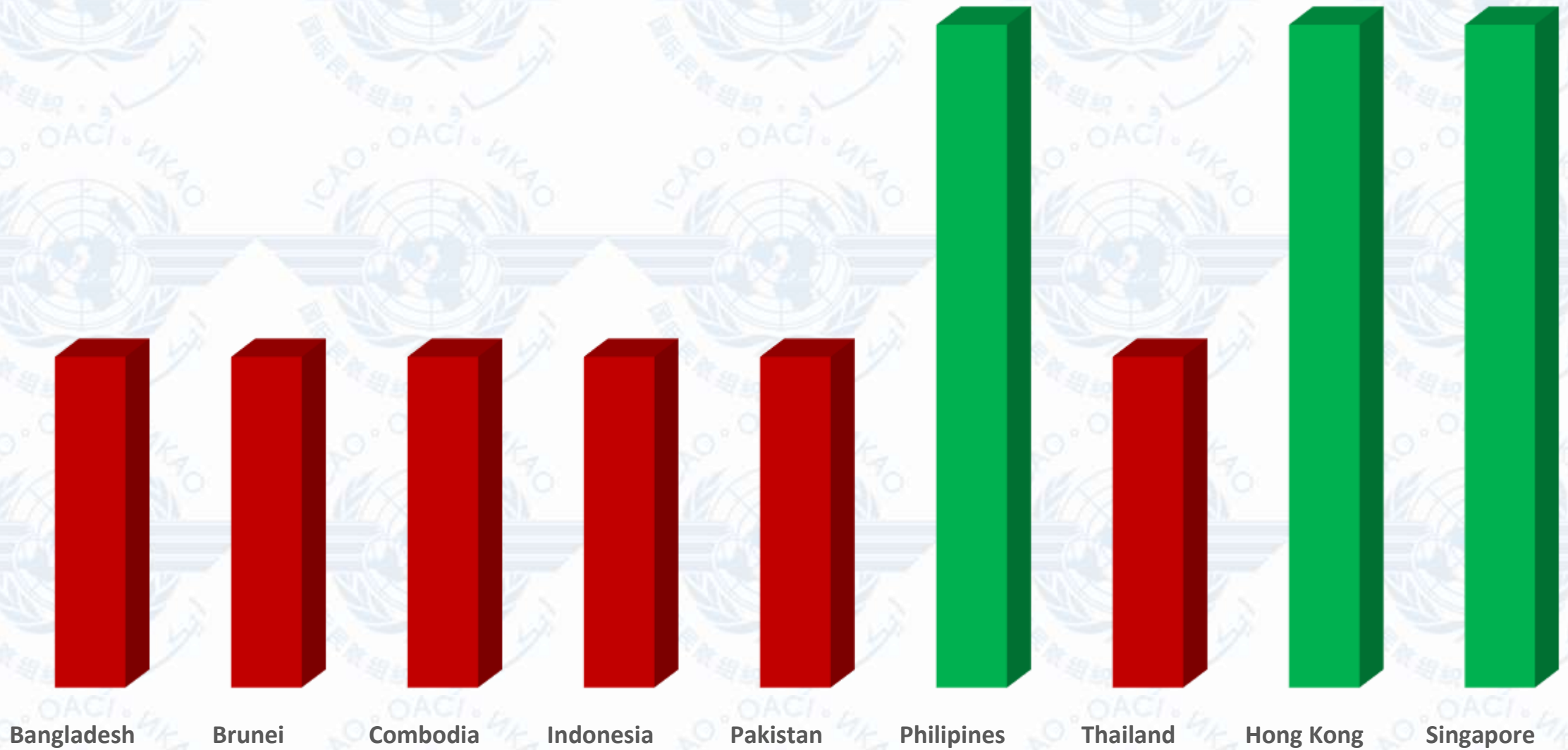
Do land management processes exist in areas surrounding aerodrome to reduce attractiveness of the environment to hazardous wildlife including food (vegetation, agriculture, waste management), water and shelter (open areas, forest,



Response -NO ; YES

## Response to Question - 17

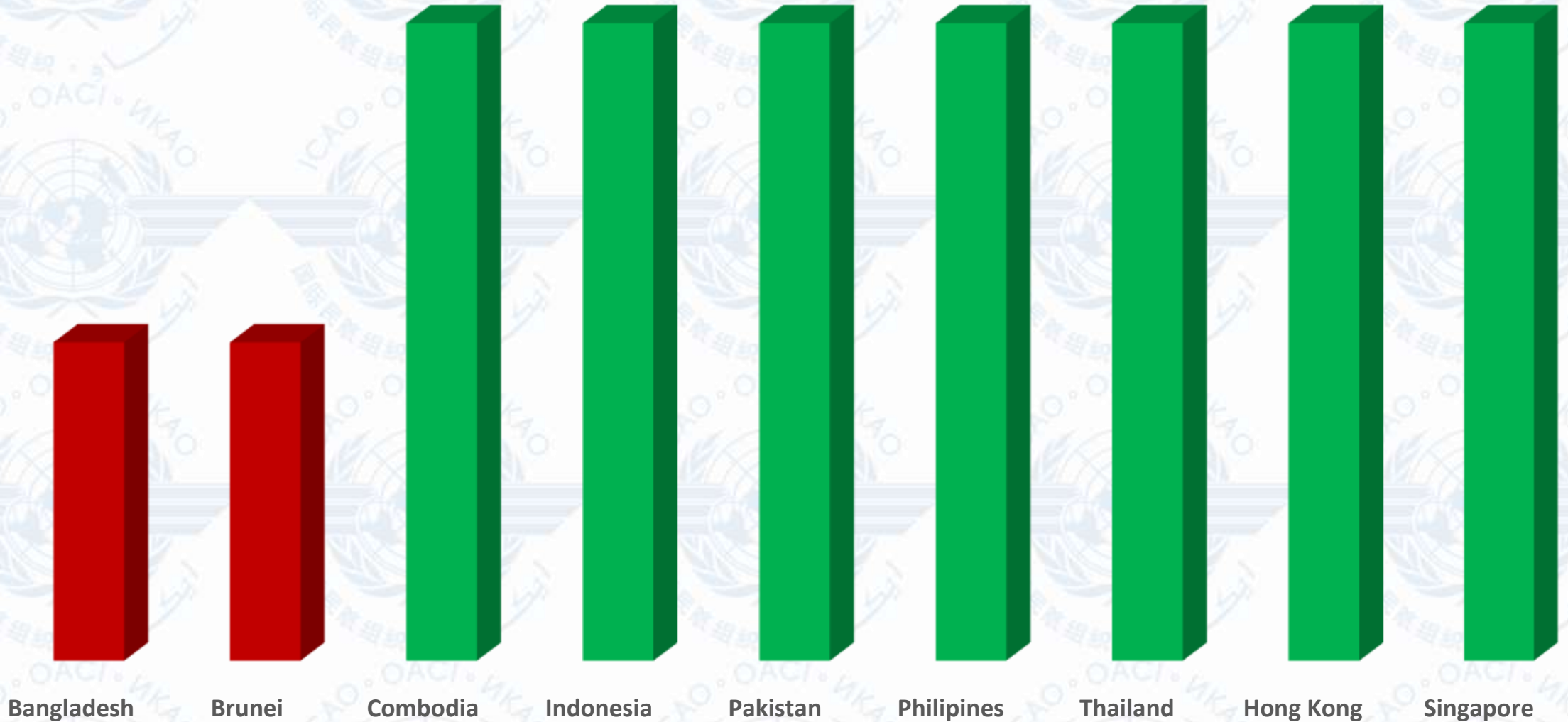
Does the aerodrome operator participate in a national hazard reduction program?



Response - NO ; YES

## Response to Question - 18

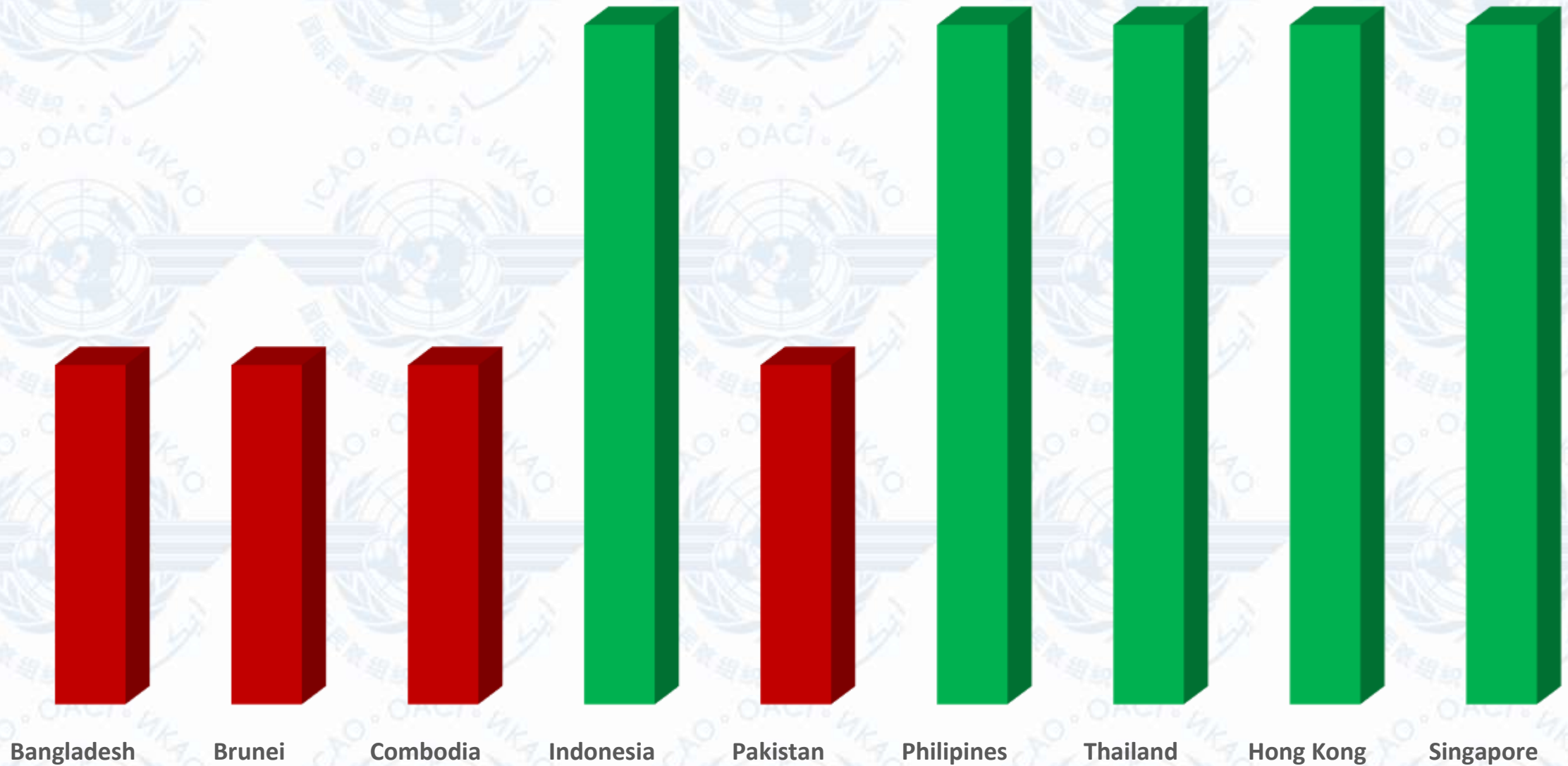
Has any wildlife assessment survey of airport been conducted with the help of external agencies and ornithologists?



Response - NO ; YES

## Response to Question - 19

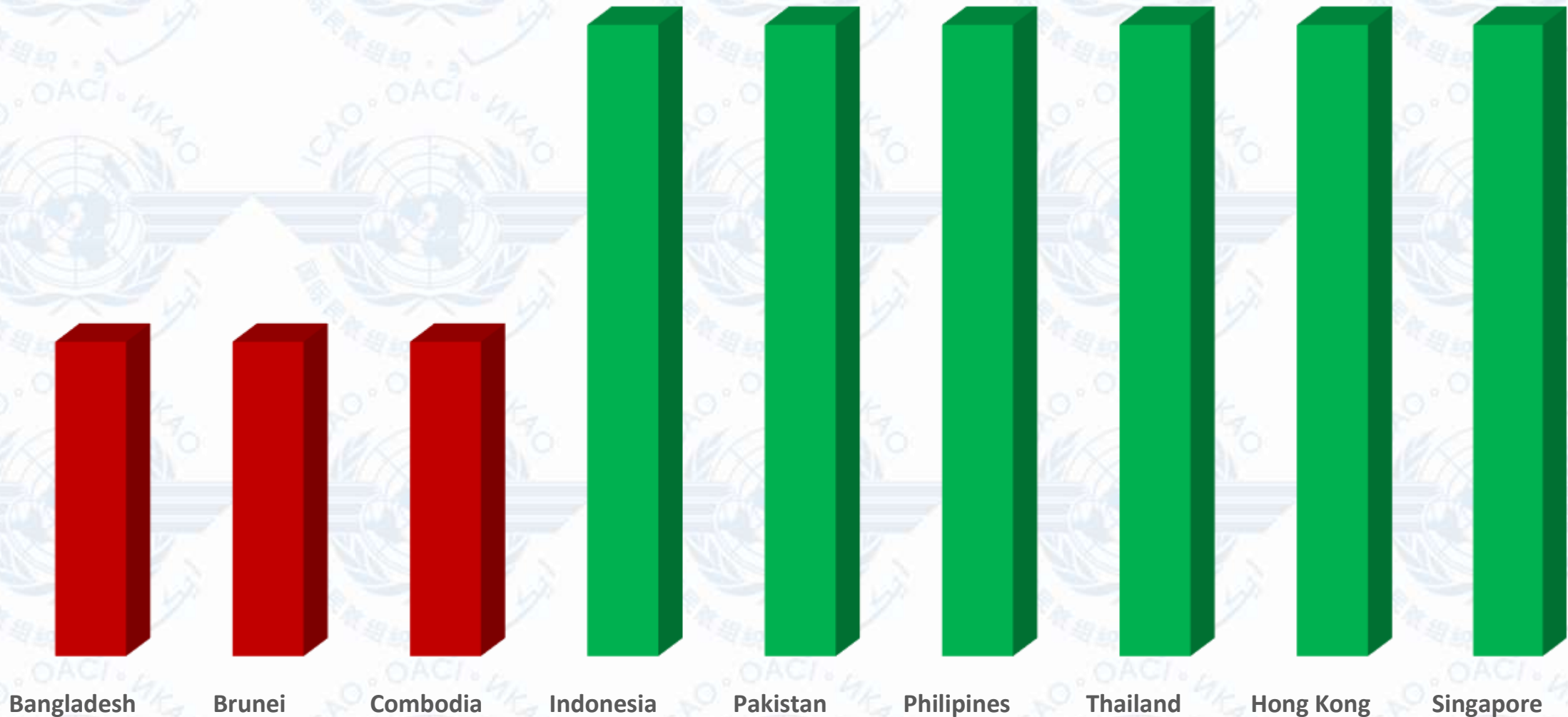
Does the aerodrome operator use particular zoning of aerodrome surroundings in WHM Program?



Response -NO ; YES

## Response to Question - 20

Does the aerodrome operator demonstrate a safety risk-based approach for wildlife hazard management?



Response - NO ; YES

## Response to Question - 21

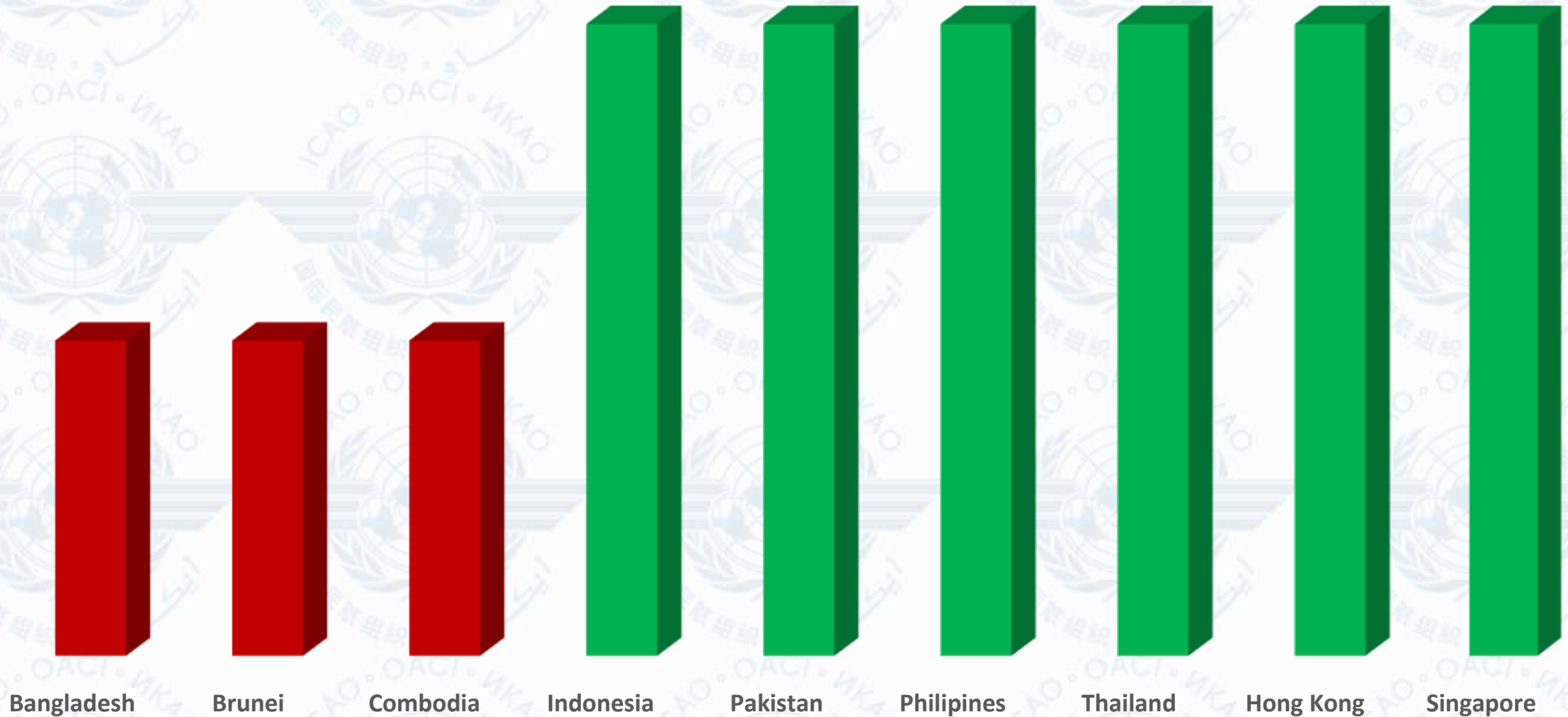
Does aerodrome operator record environmental issues affecting wildlife strike hazards?



Response -NO ; YES

## Response to Question - 22

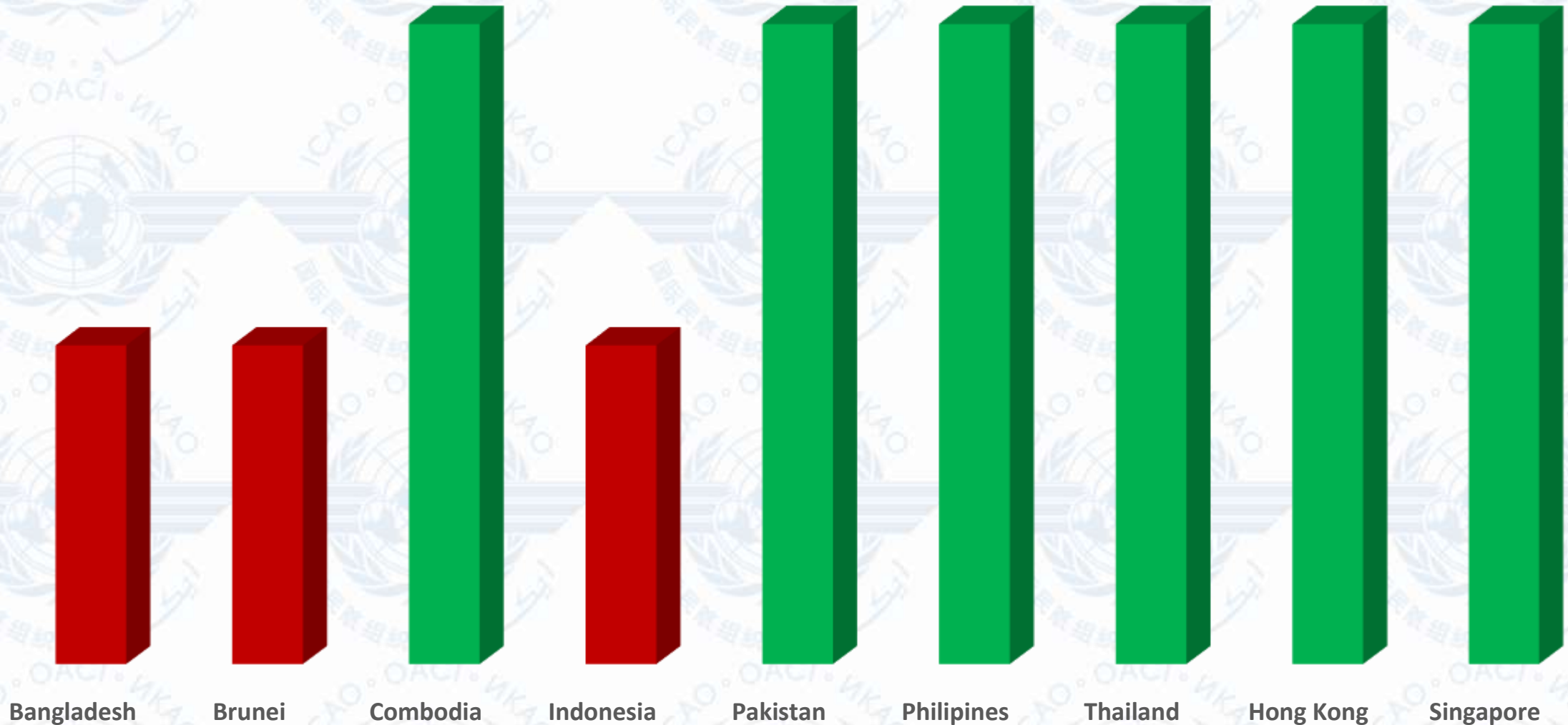
Has the aerodrome operator employed competent manpower for wildlife management at the airport?



Response -NO ; YES

## Response to Question - 23

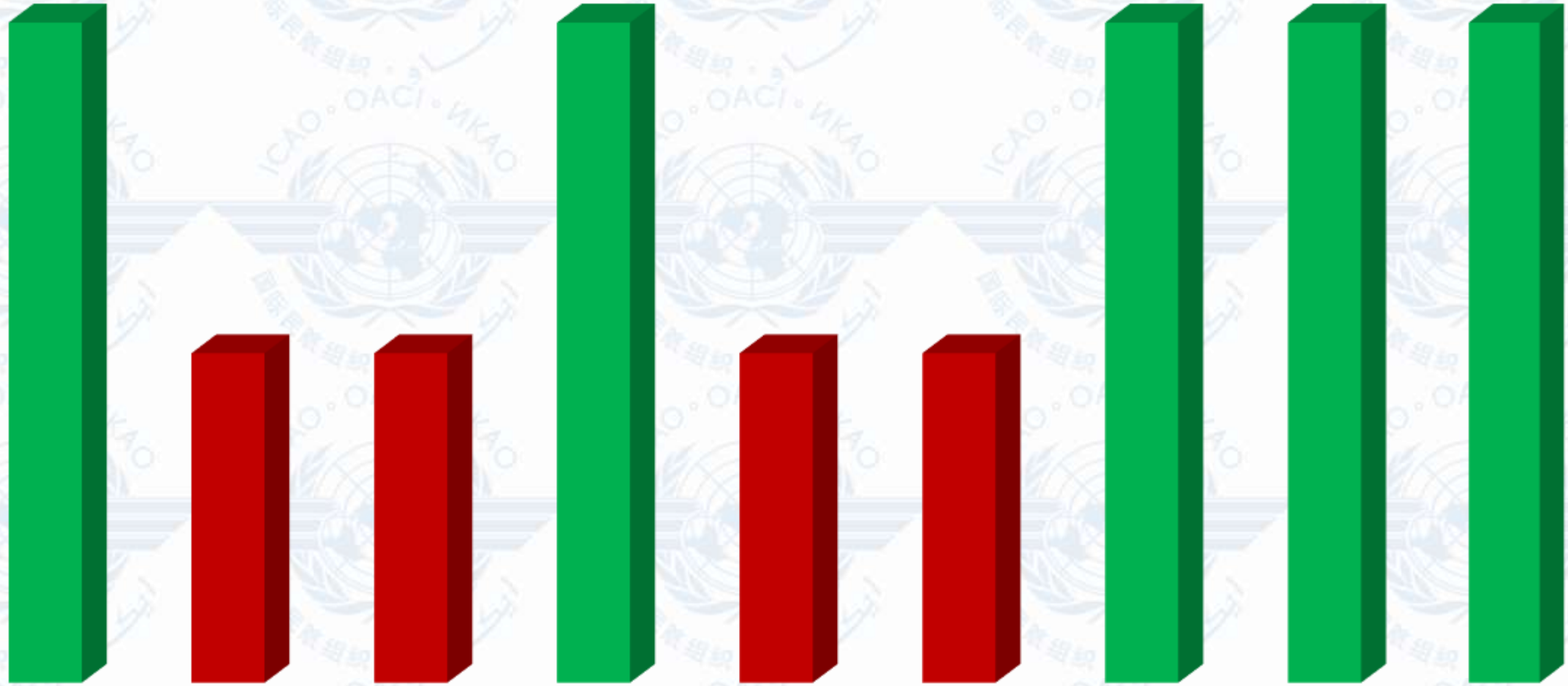
Has an airfield environment management committee been established at the aerodrome and are meetings conducted regularly?



Response -NO ; YES

## Response to Question - 24

Does the aerodrome operator review and communicate wildlife strike hazards to airlines and relevant stakeholders?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

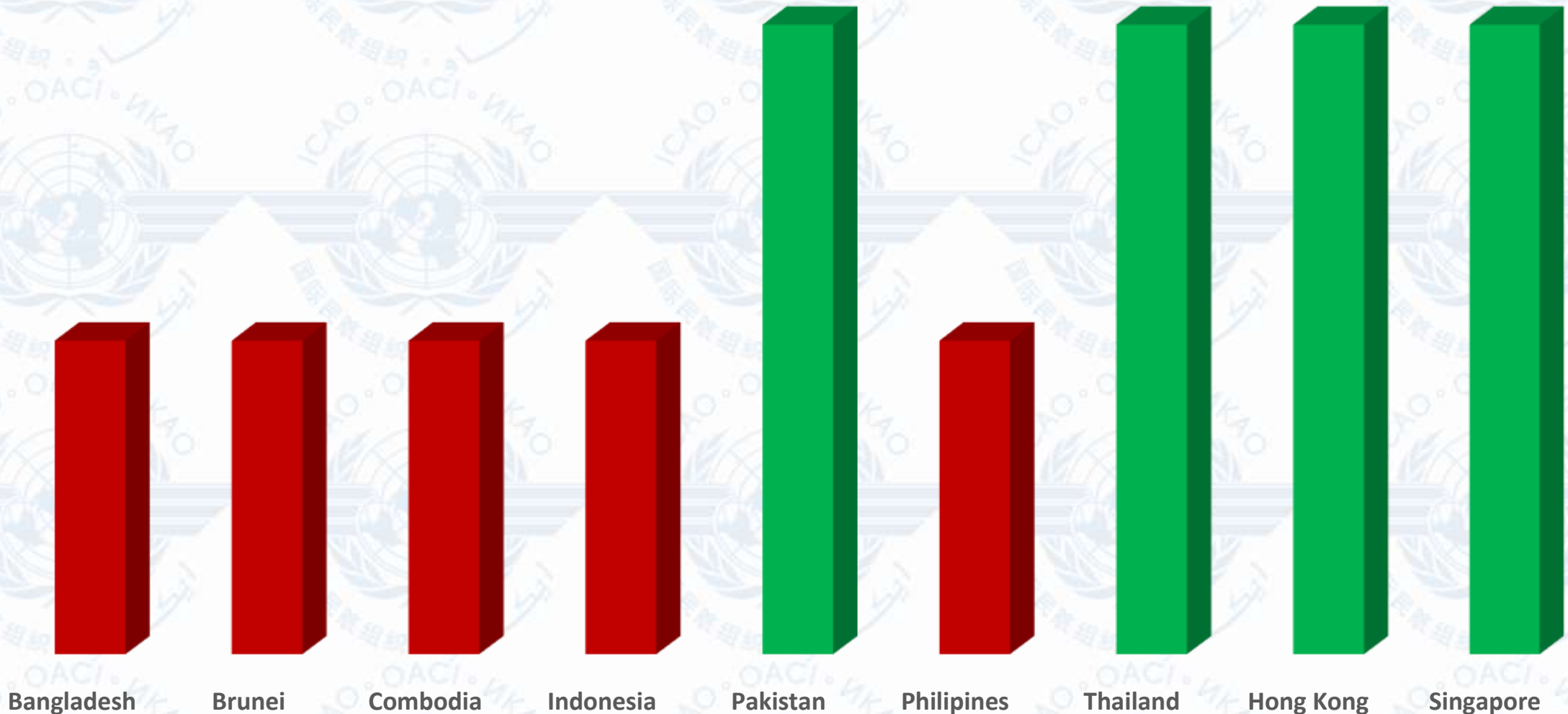
Hong Kong

Singapore

Response -NO ; YES

## Response to Question - 25

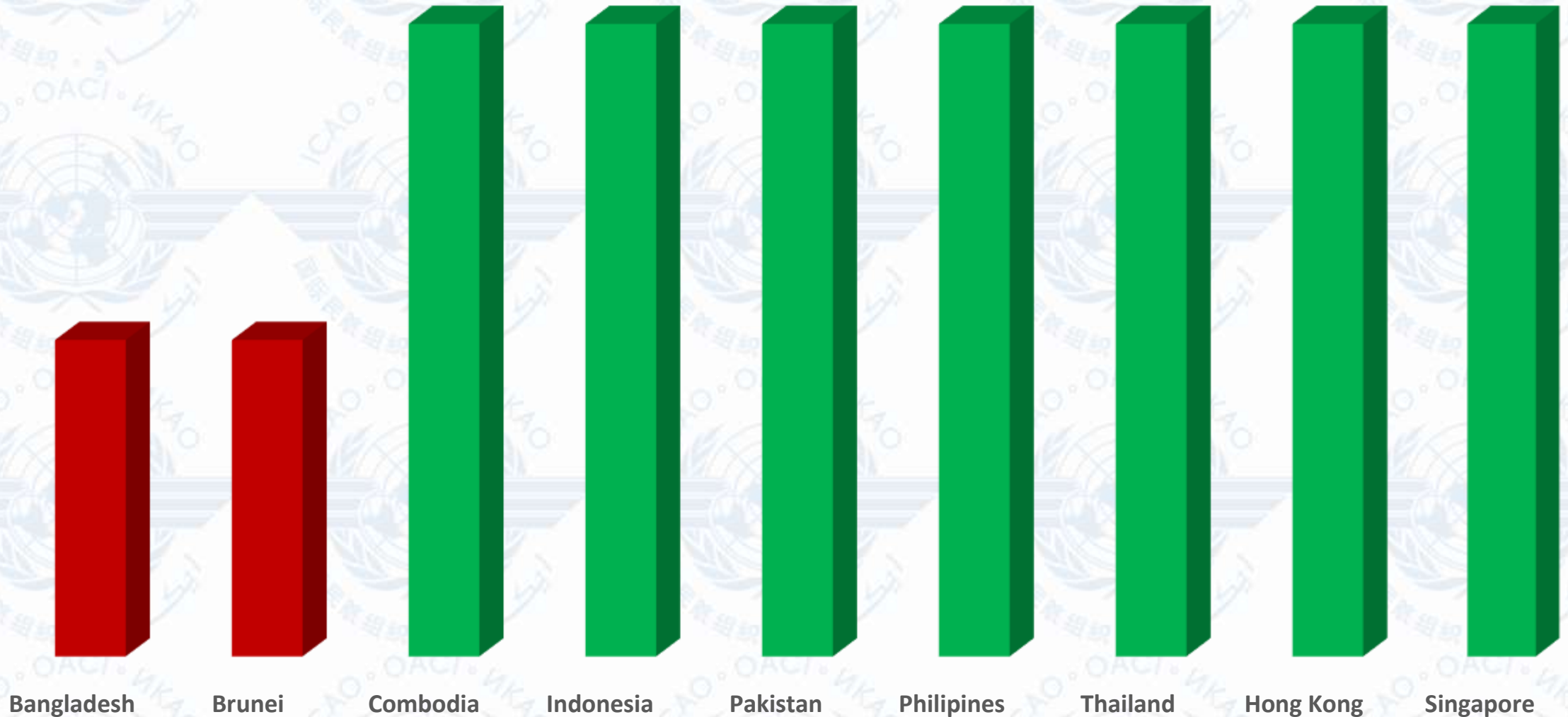
Does the wildlife management program specify how often an aerodrome operator should inspect in and around the aerodrome to identify the sources of wildlife/bird attraction?



Response - NO ; YES

## Response to Question - 26

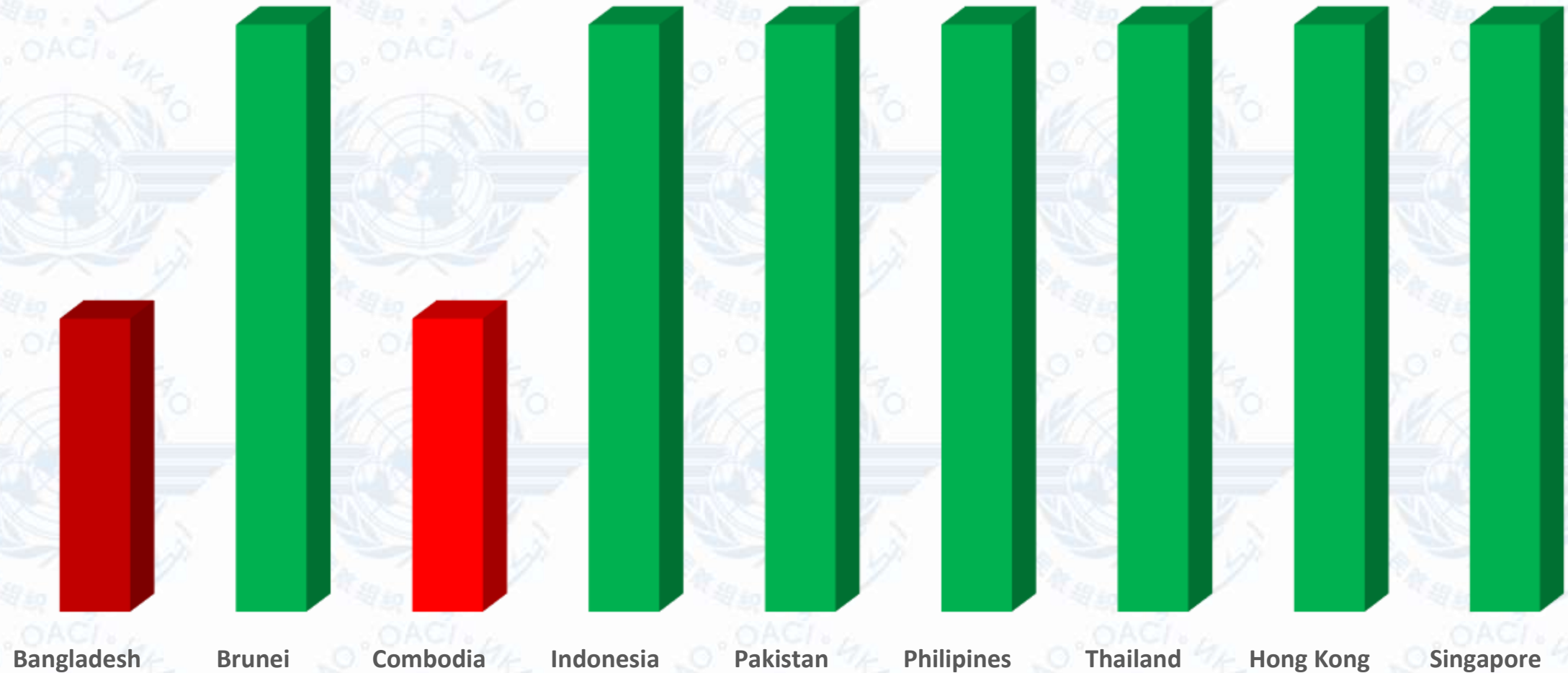
Is inspection being carried out to monitor illegal slaughtering within the ten kilo-meter radius of the aerodrome?



Response - NO ; YES

## Response to Question - 27

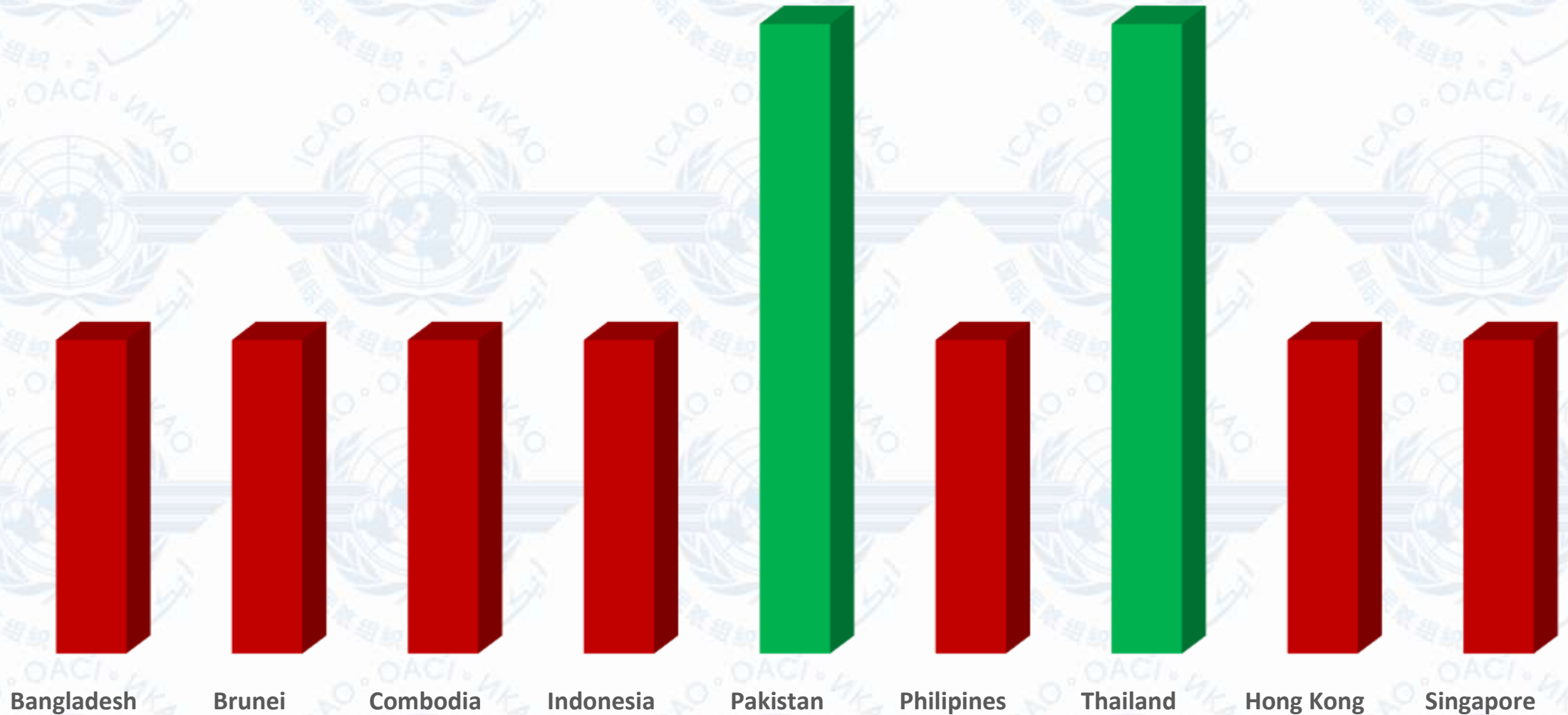
Is there a process for liaison with government agencies and quazi government agencies to ensure the aerodrome is aware of development's that may contribute to creating additional wildlife hazards? For e.g. wildlife sanctuaries etc



Response - NO ; YES

## Response to Question - 28

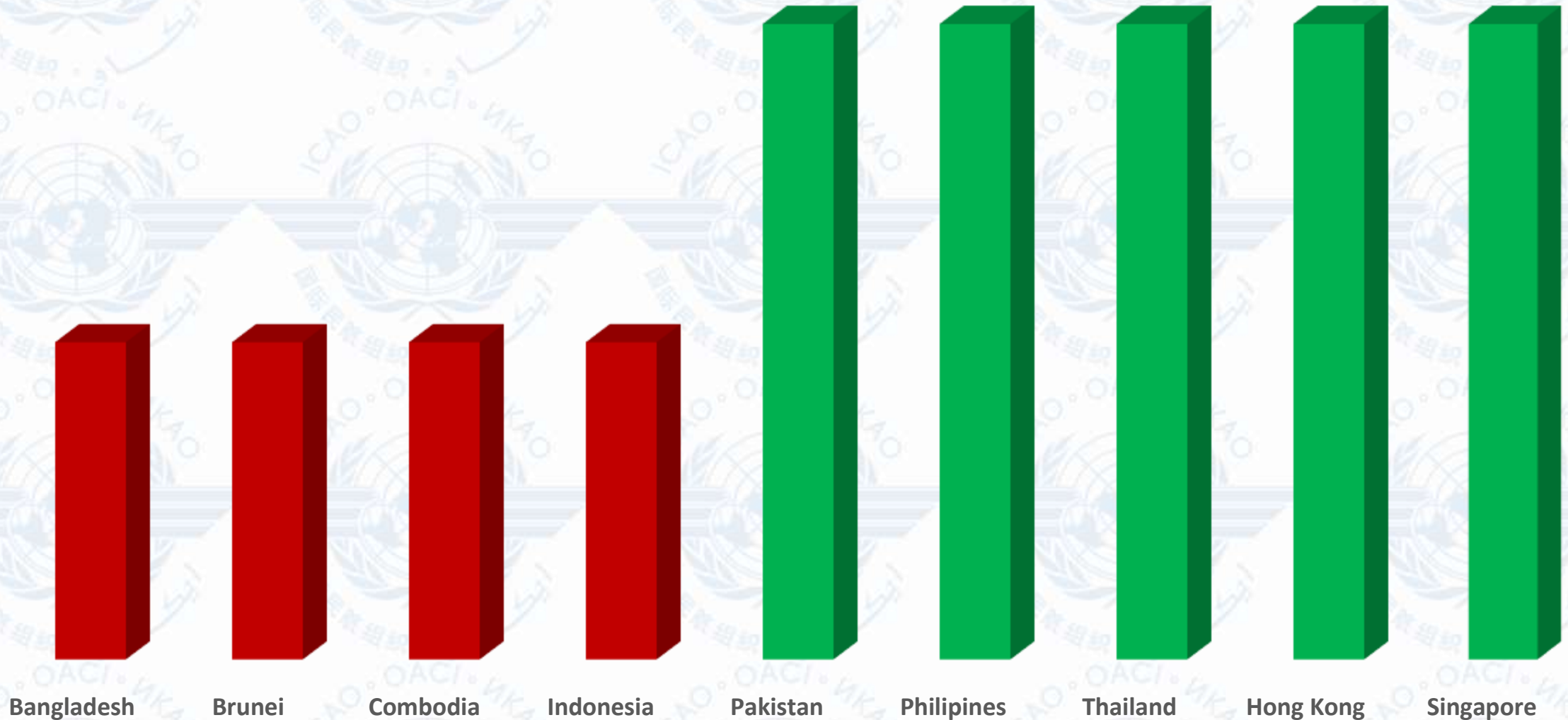
Does the aerodrome operator submit annual report on Wildlife hazard management to CAA/DGCA?



Response - NO ; YES

## Response to Question - 29

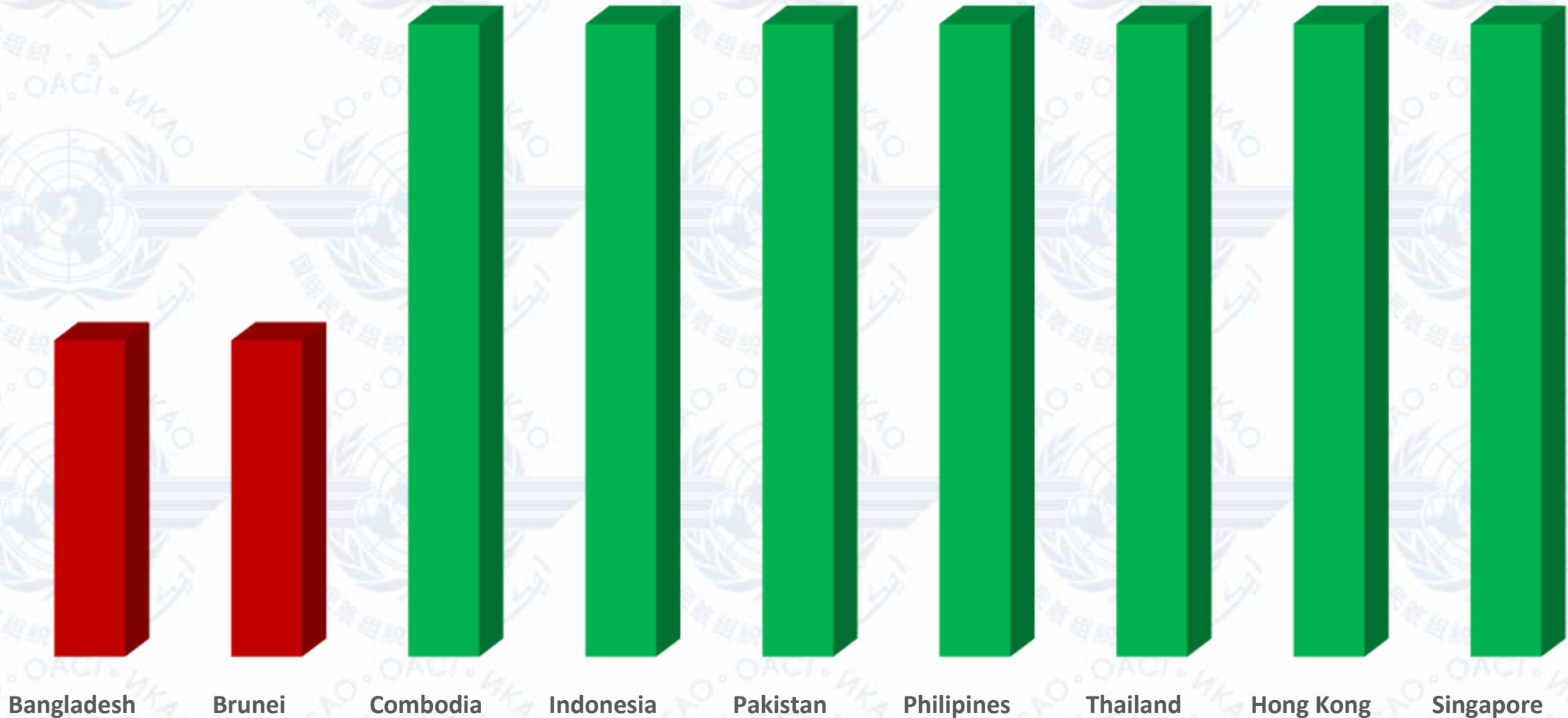
Has the aerodrome operator documented safety risk assessment processes using strike data for each species?



Response - NO ; YES

## Response to Question - 30

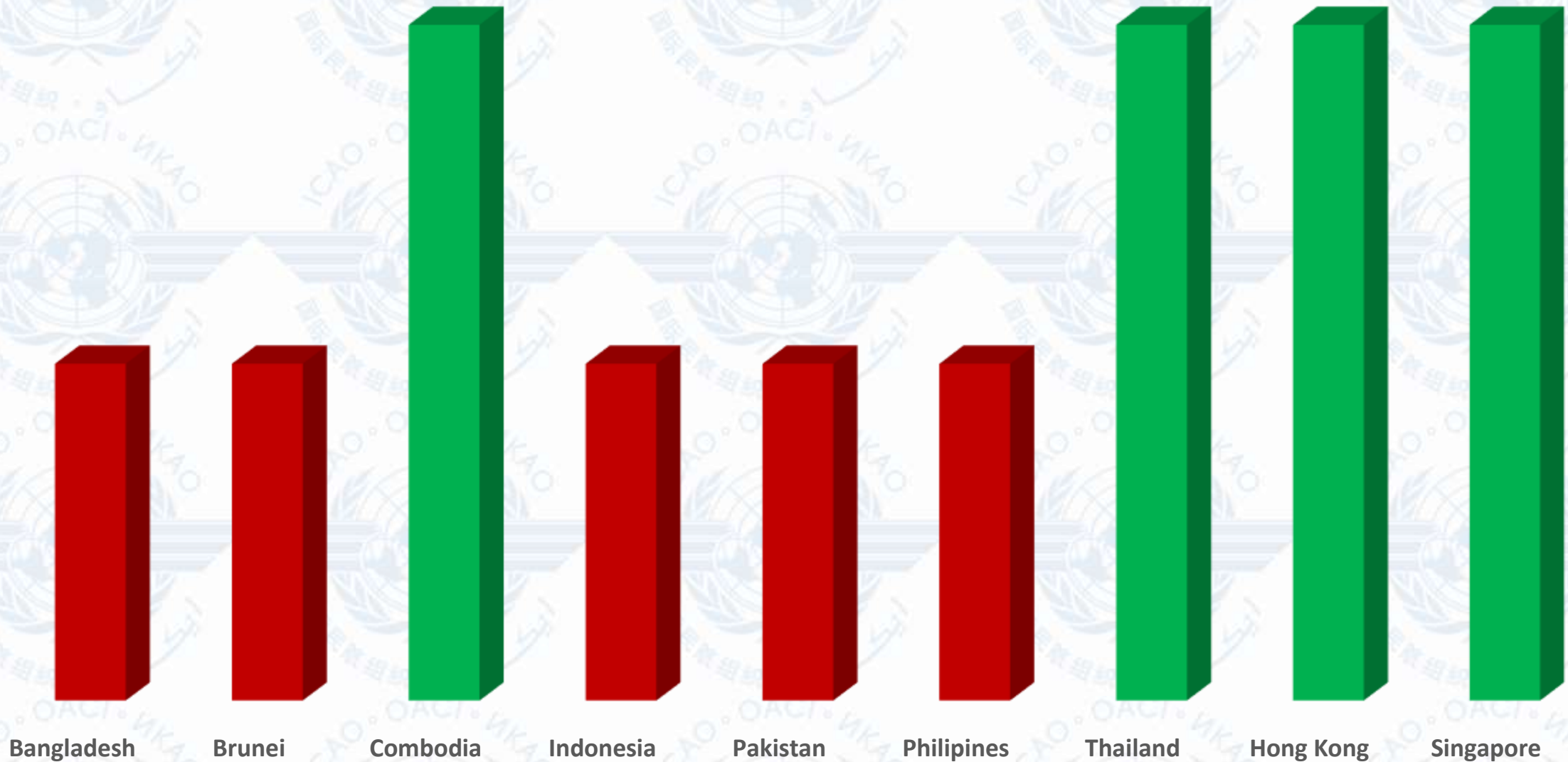
Does the aerodrome operator provide information on the presence of species, number of individuals and their biology?



Response - NO ; YES

## Response to Question - 31

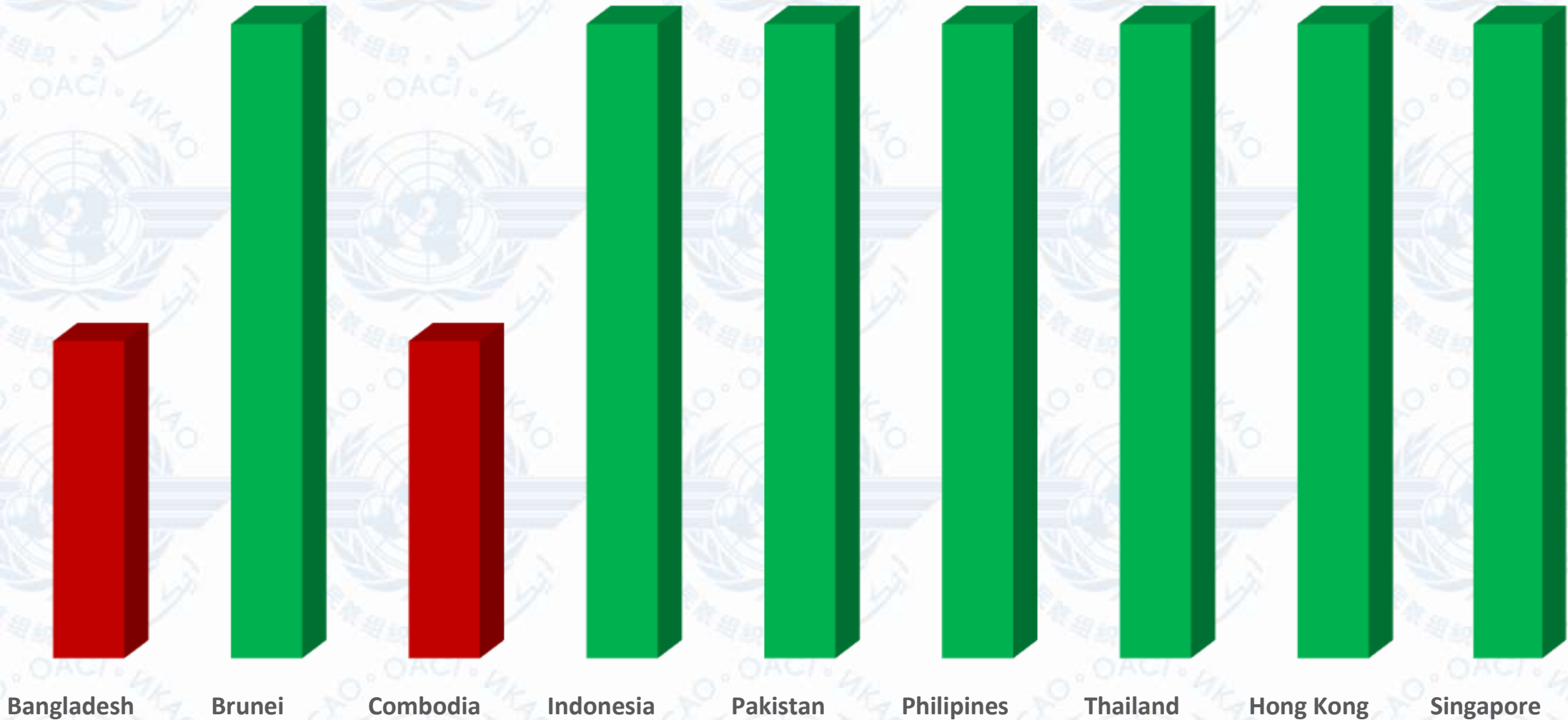
Does the aerodrome operator use a DNA based species identification procedure?



Response - NO ; YES

## Response to Question - 32

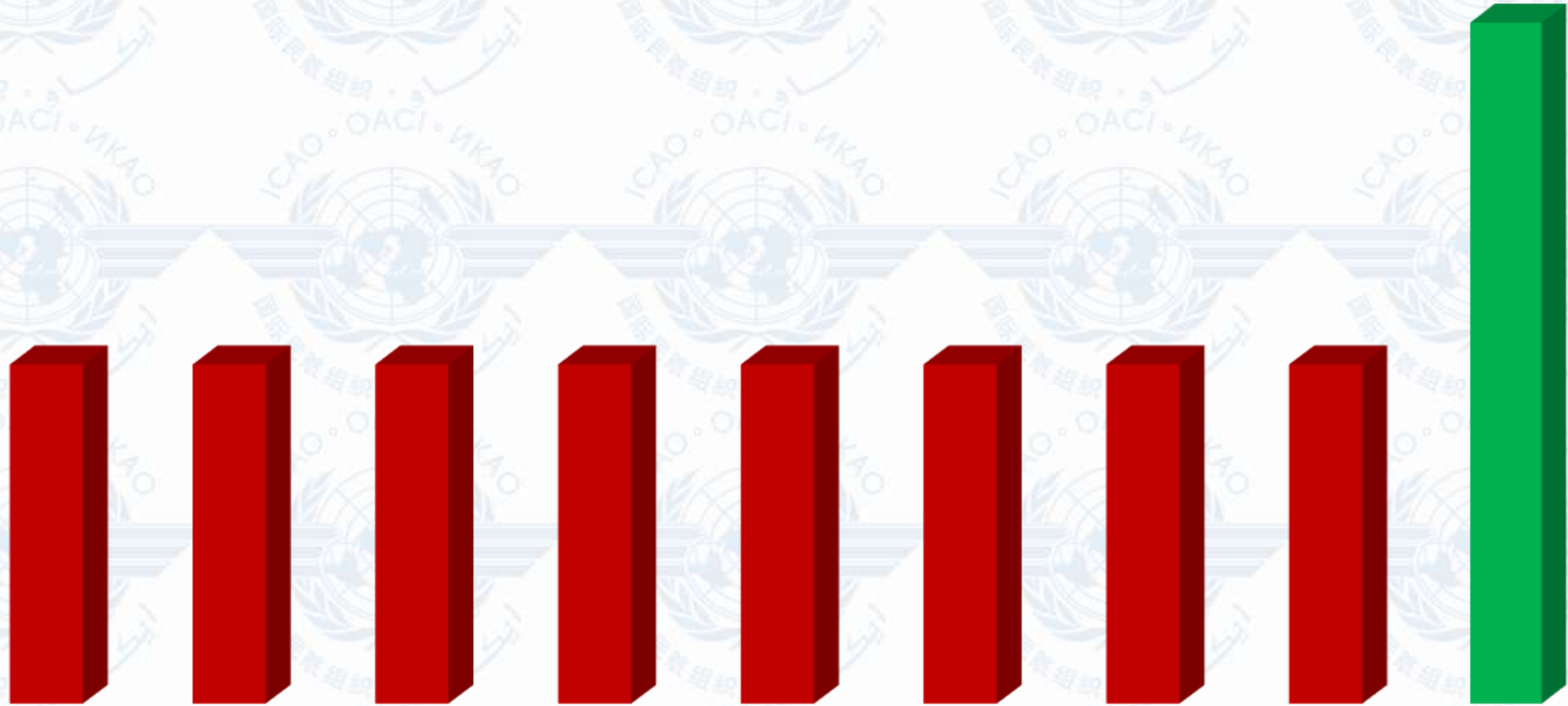
Does the aerodrome operator conduct species identification procedures by trained personnel to include feathers, animal remains, DNA analysis, etc.



Response - NO ; YES

## Response to Question - 33

Does the aerodrome operator use any other species identification procedures?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

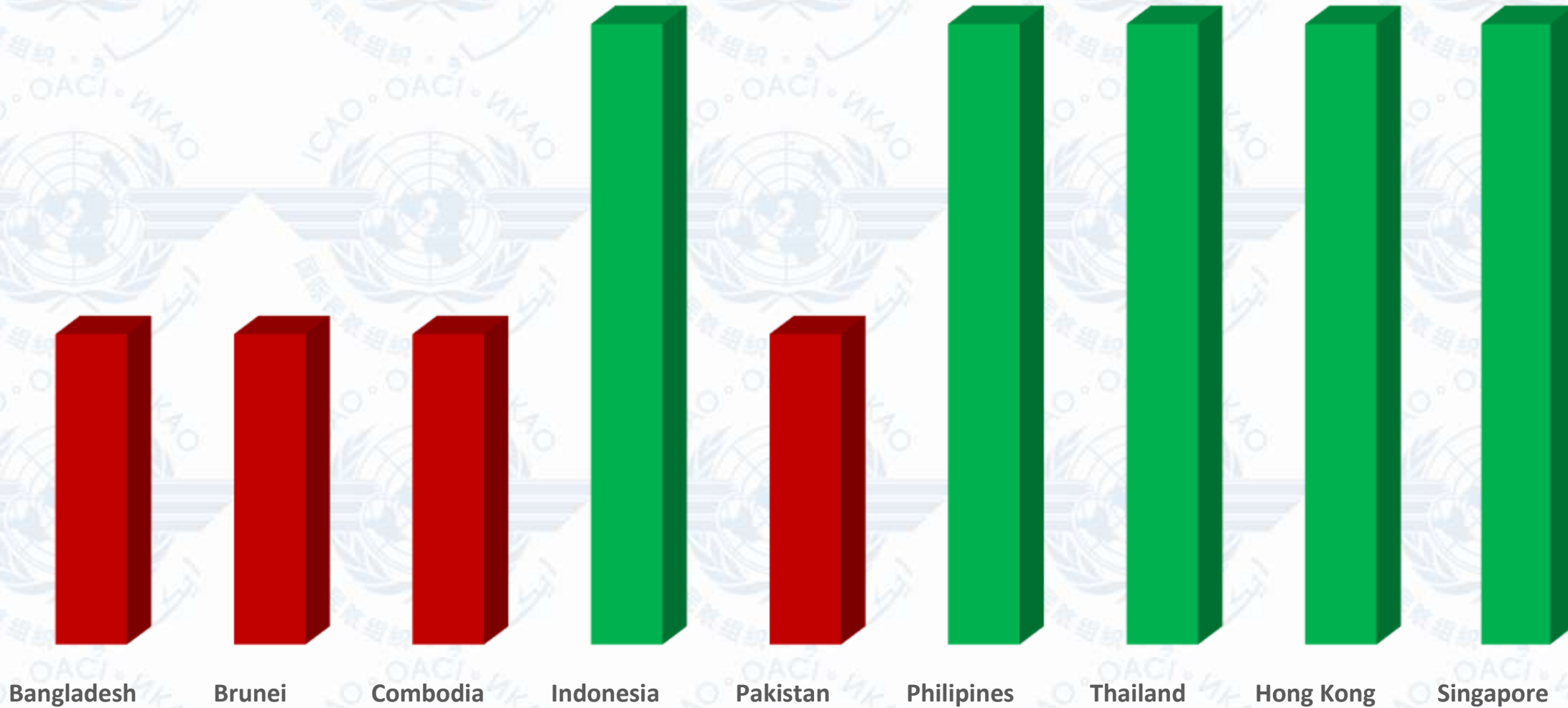
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 34

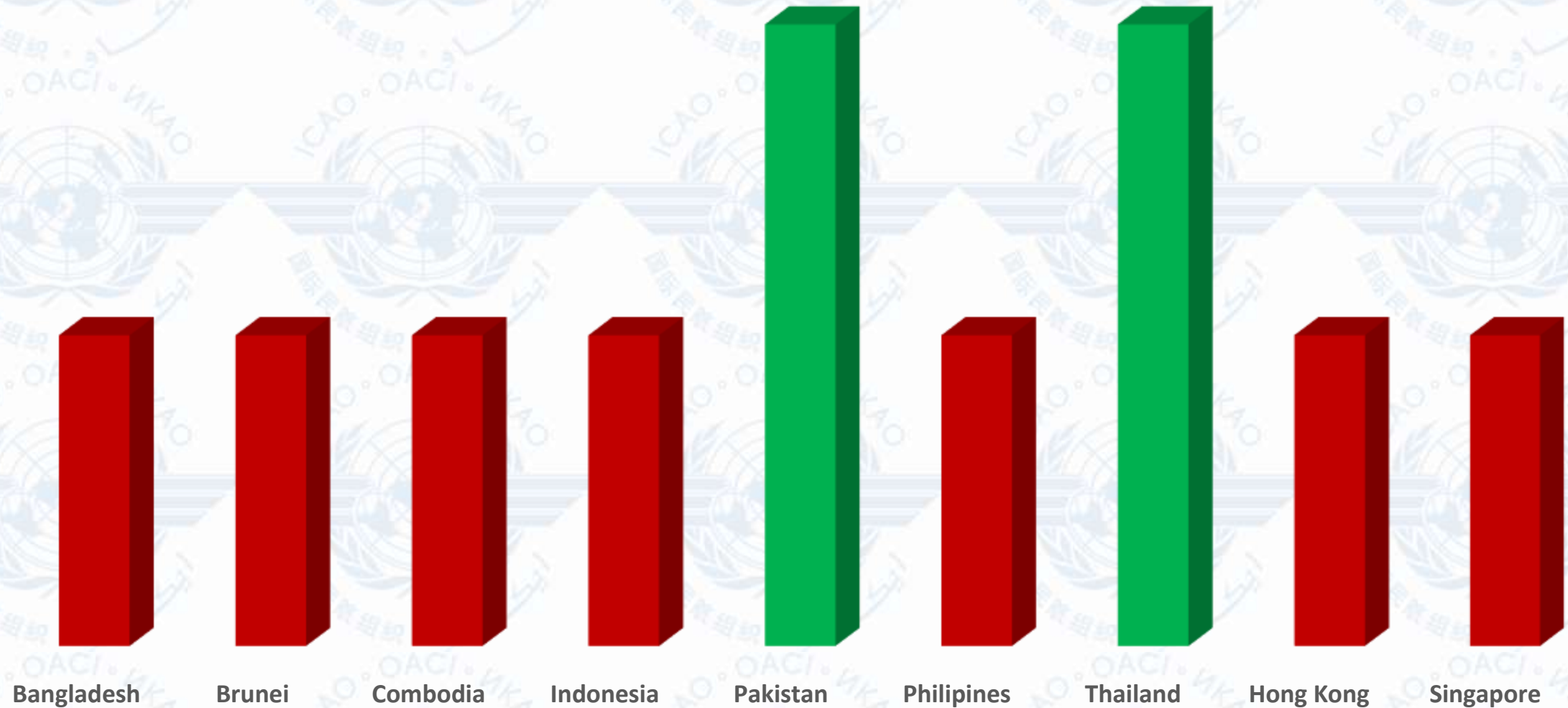
Does the aerodrome operator have wildlife management related Safety management systems (SMS) in place?



Response - NO ; YES

## Response to Question - 35

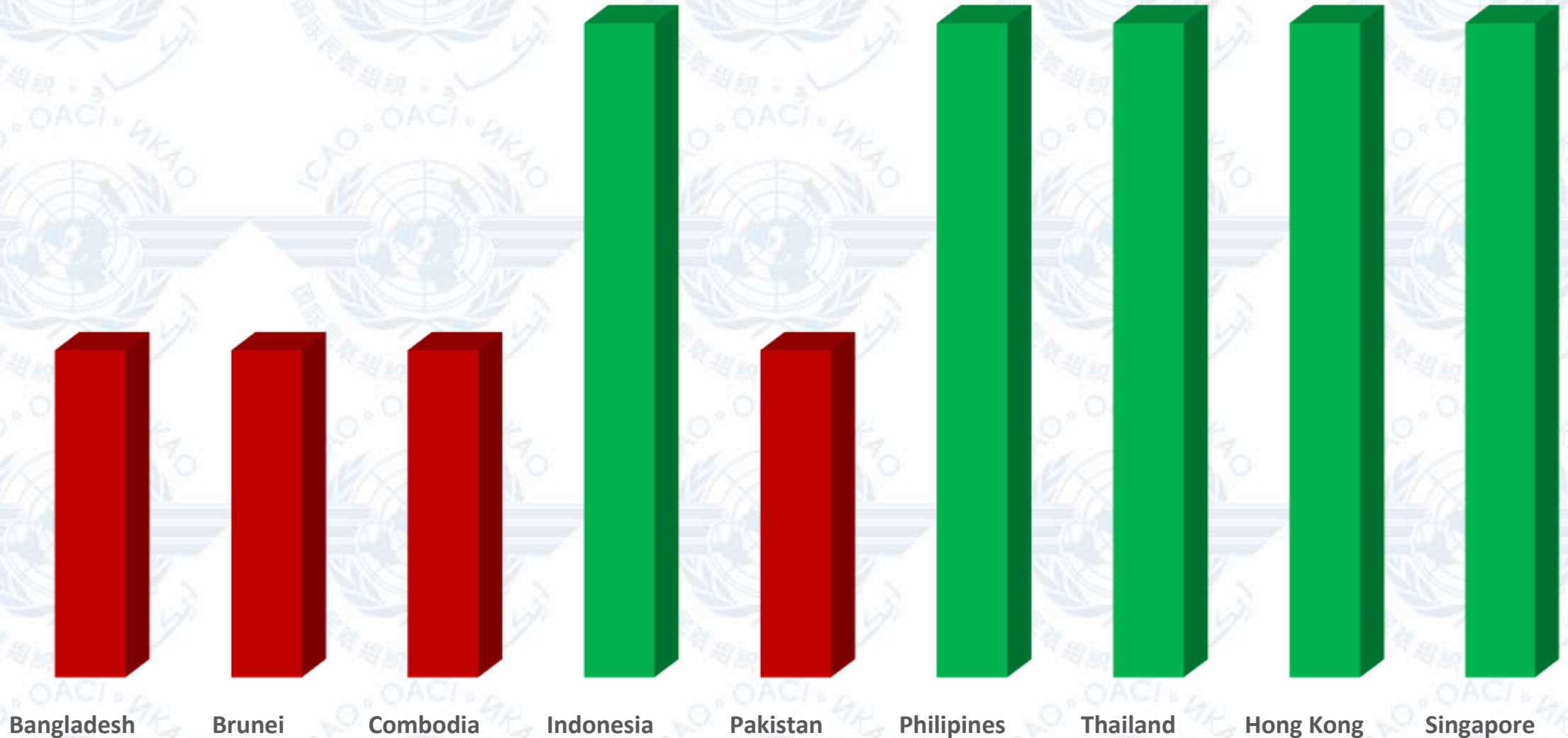
Can aerodrome operator calculate probability of wildlife strike based on activity and number of flights?



Response - NO ; YES

## Response to Question - 36

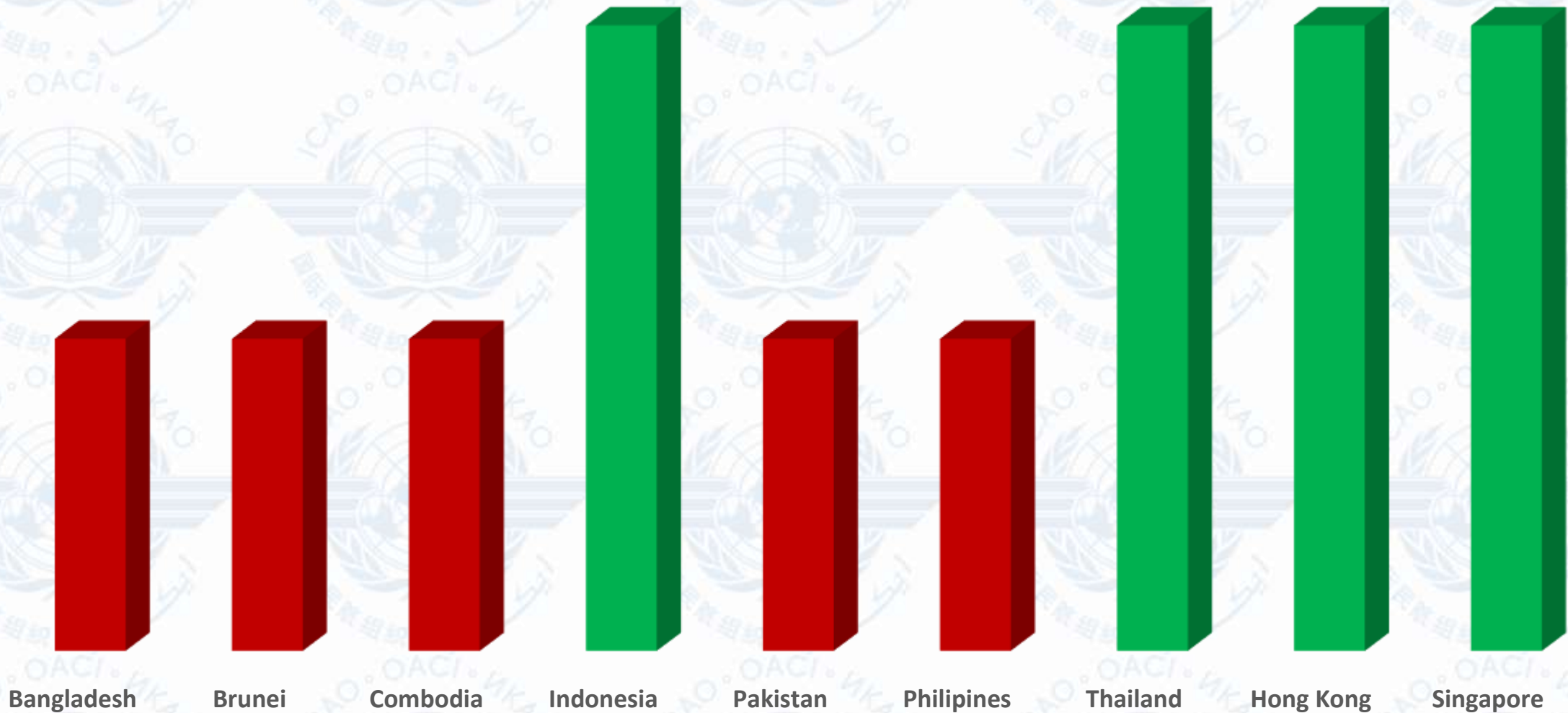
Are wildlife strike hazard assessments being carried out by specialists?



Response - NO ; YES

## Response to Question - 37

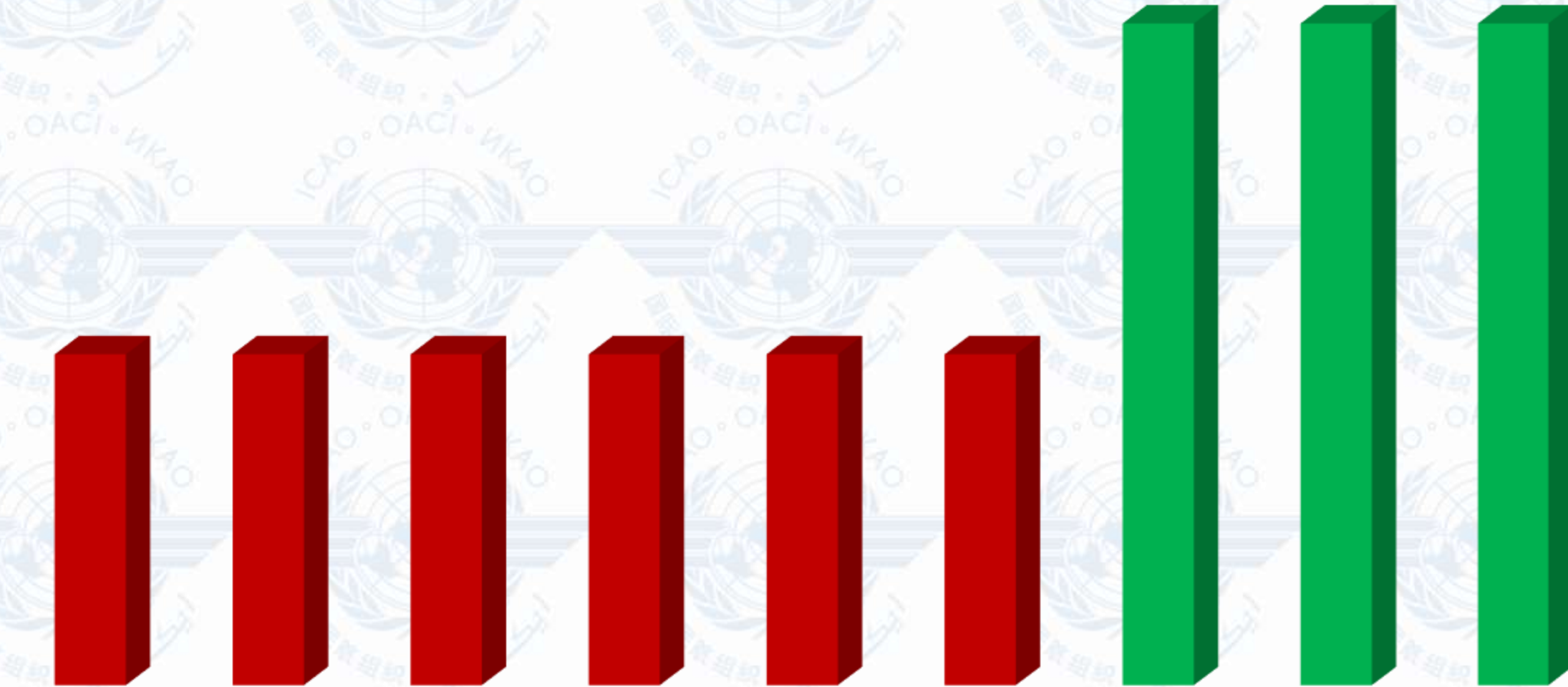
Does the aerodrome operator manage wildlife strike hazards in accordance with safety risk assessments conducted by a relevant expert?



Response - NO ; YES

## Response to Question - 38

Has an assessment of wildlife strike hazard outside the aerodrome been undertaken?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

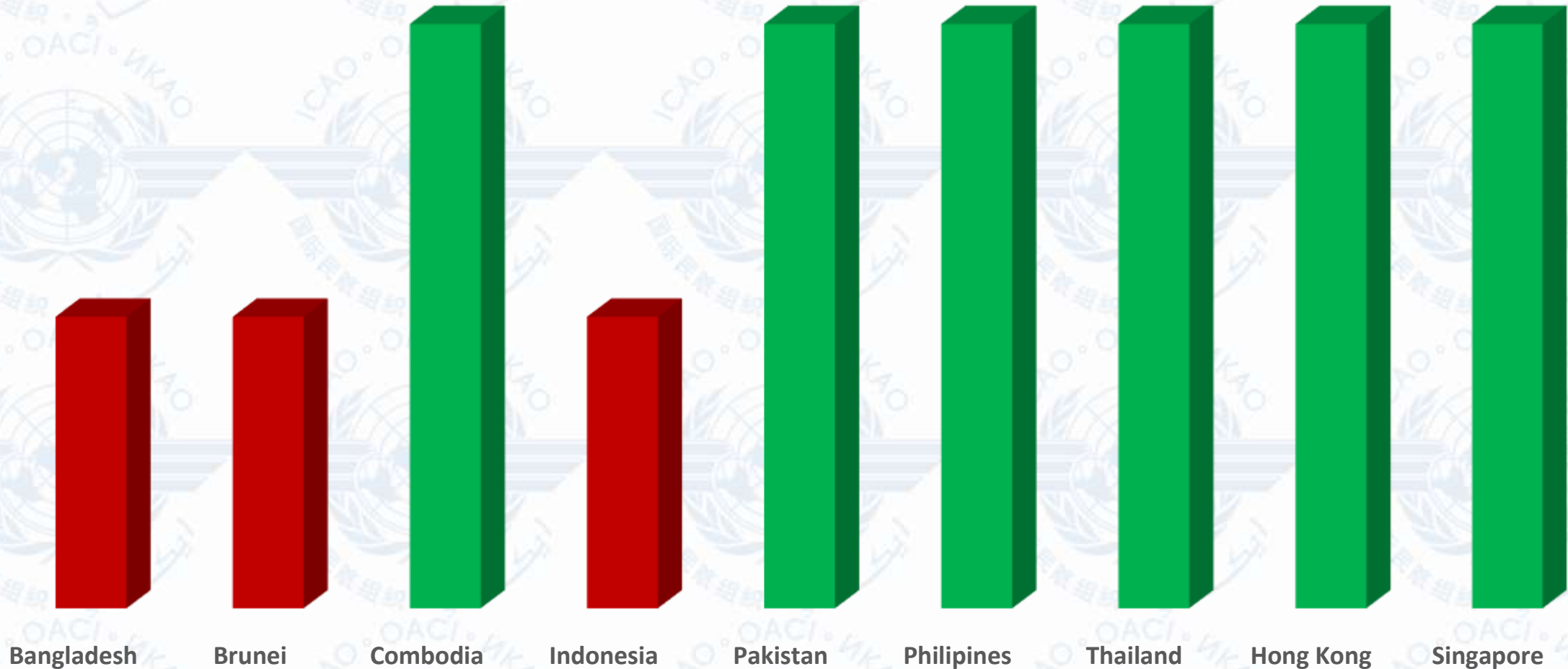
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 39

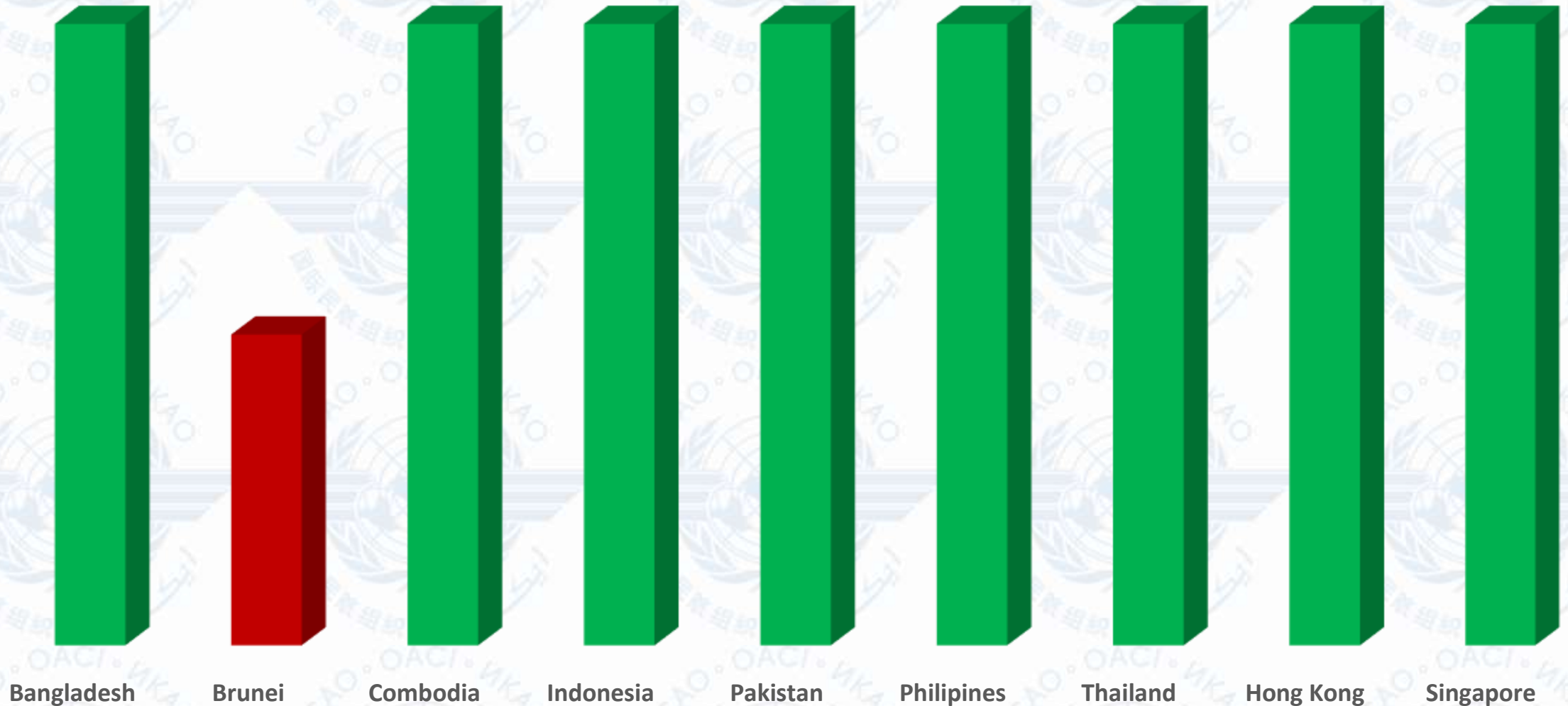
Does the aerodrome operator have a procedure in place to identify source of wildlife attractants in the vicinity of aerodrome such as slaughter houses, Slum clusters, garbage dump, illegal abattoirs, unauthorized piggeries, dairy



Response - NO ; YES

## Response to Question - 41

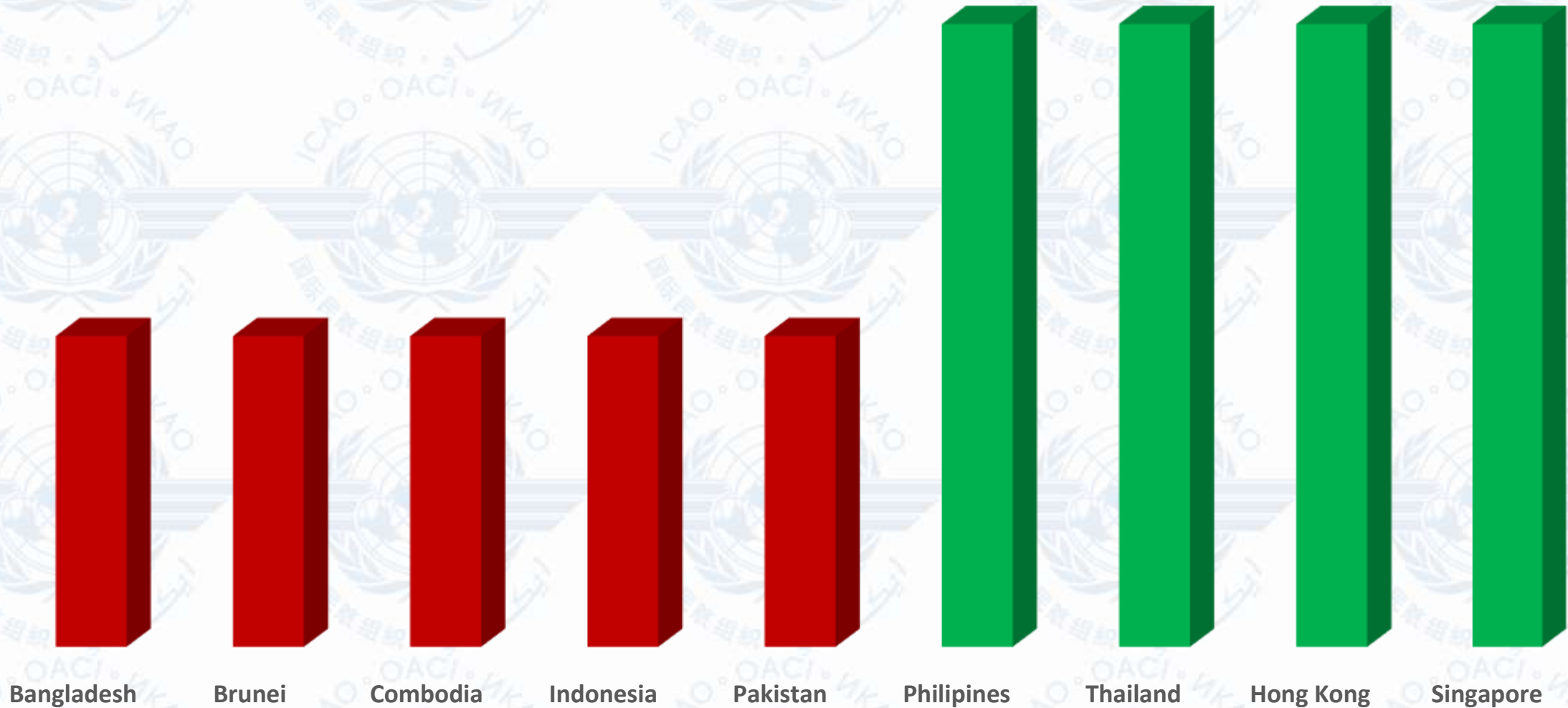
Is there a proper waste management disposal system in place for food remains inside the aerodrome and a system to avoid waste dumping in an uncovered bin in vicinity of aerodrome?



Response - NO ; YES

## Response to Question - 42

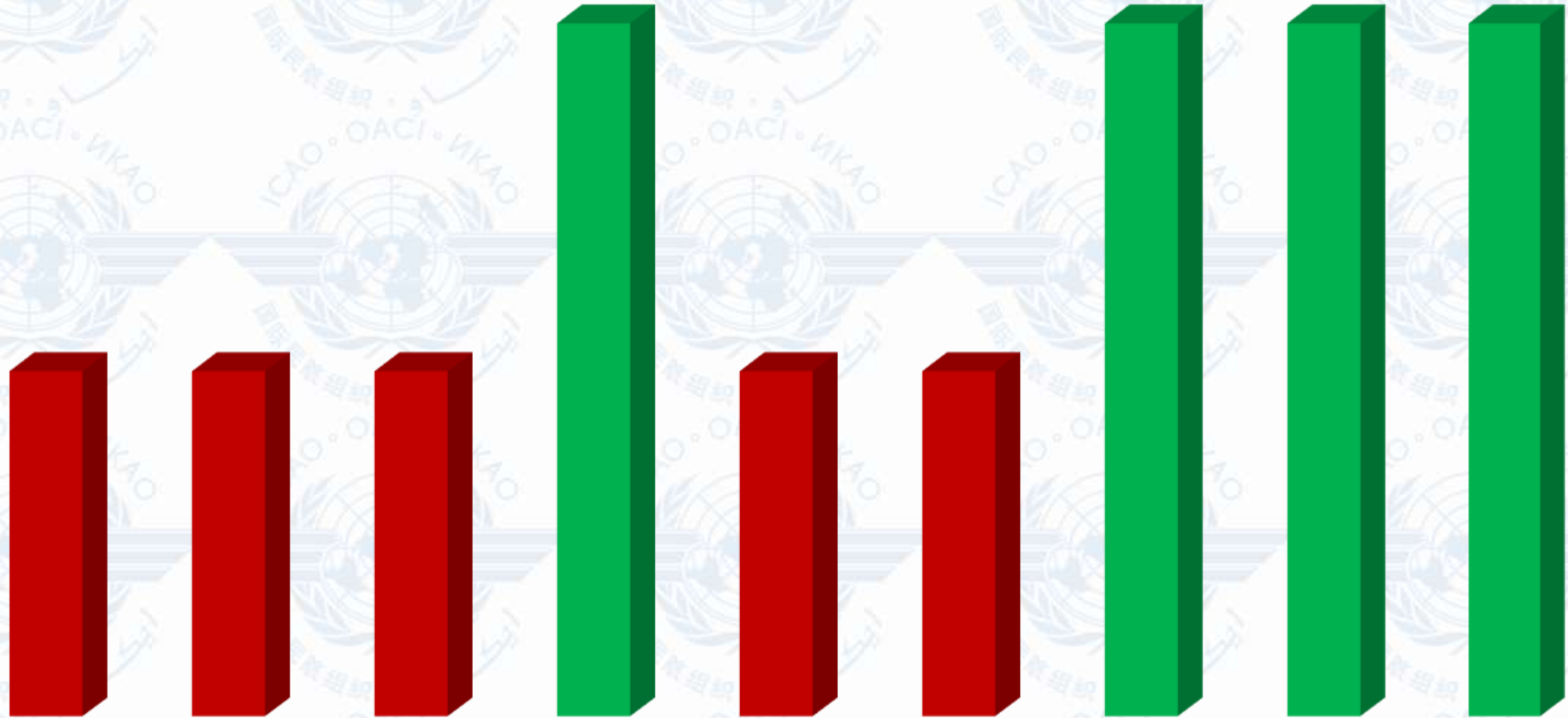
Are ecological measures implemented to limit or reduce wildlife attractiveness at the airport and in the vicinity?



Response - NO ; YES

## Response to Question - 44

Does a process exist at the aerodrome to trap hazardous wildlife for distant release?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

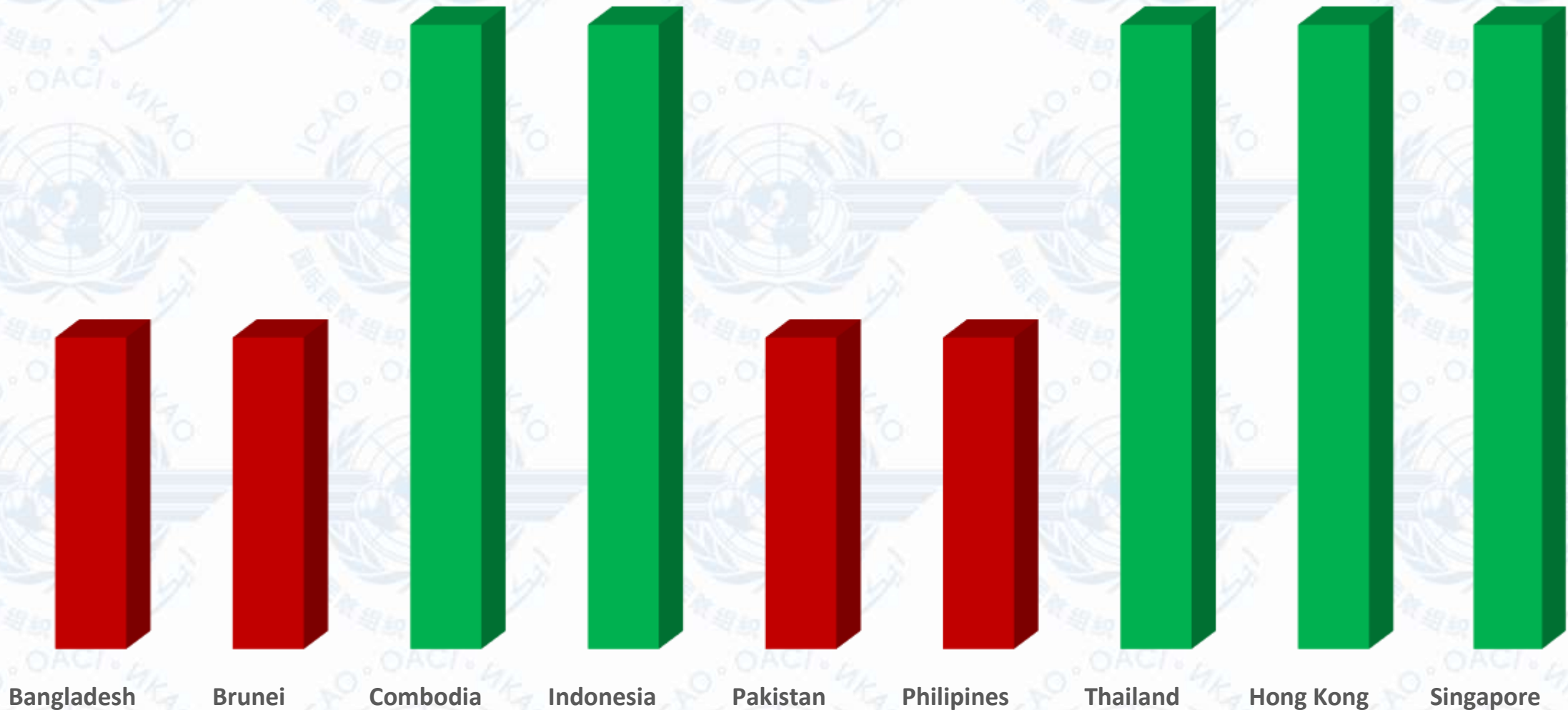
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 45

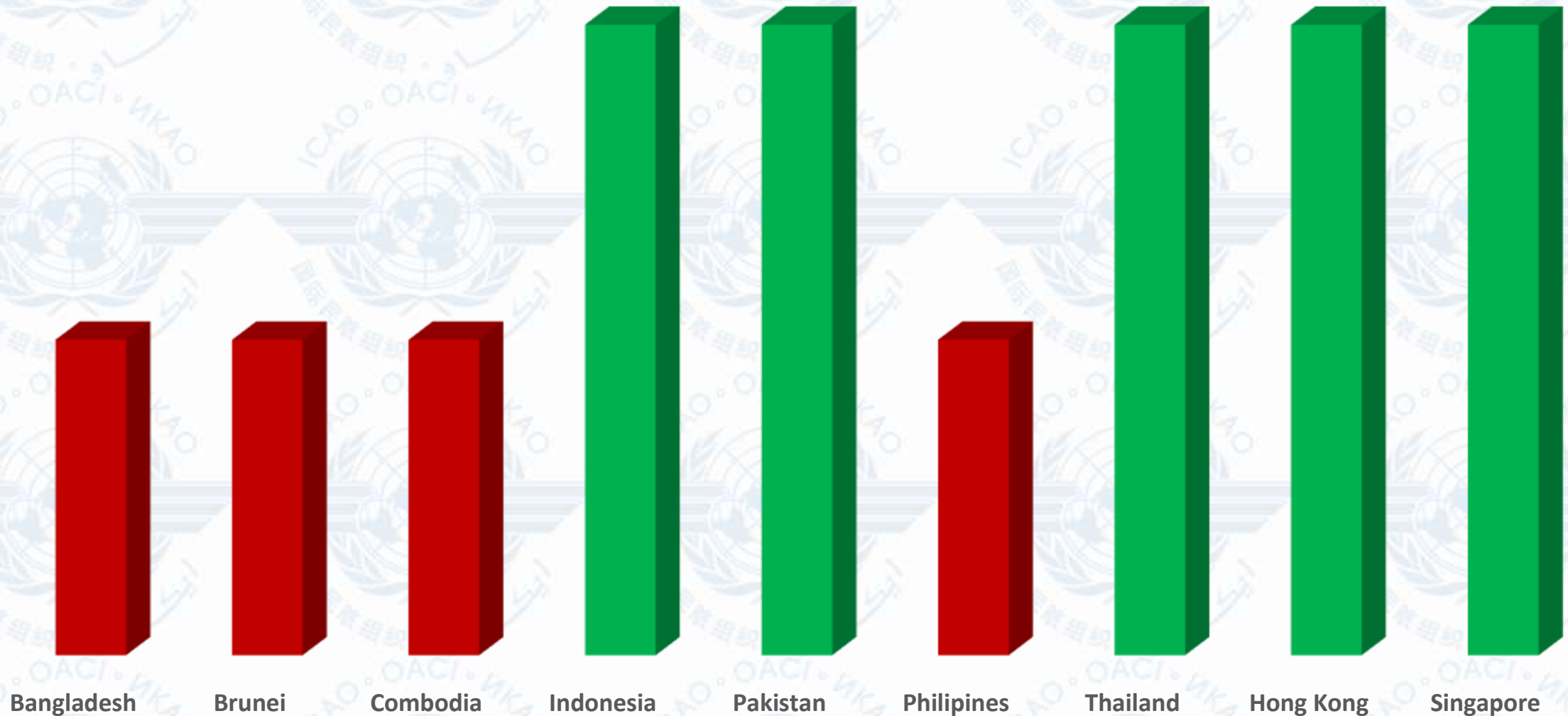
Does the aerodrome operator use any professional rescue groups in wildlife trapping and distant release?



Response - NO ; YES

## Response to Question - 46

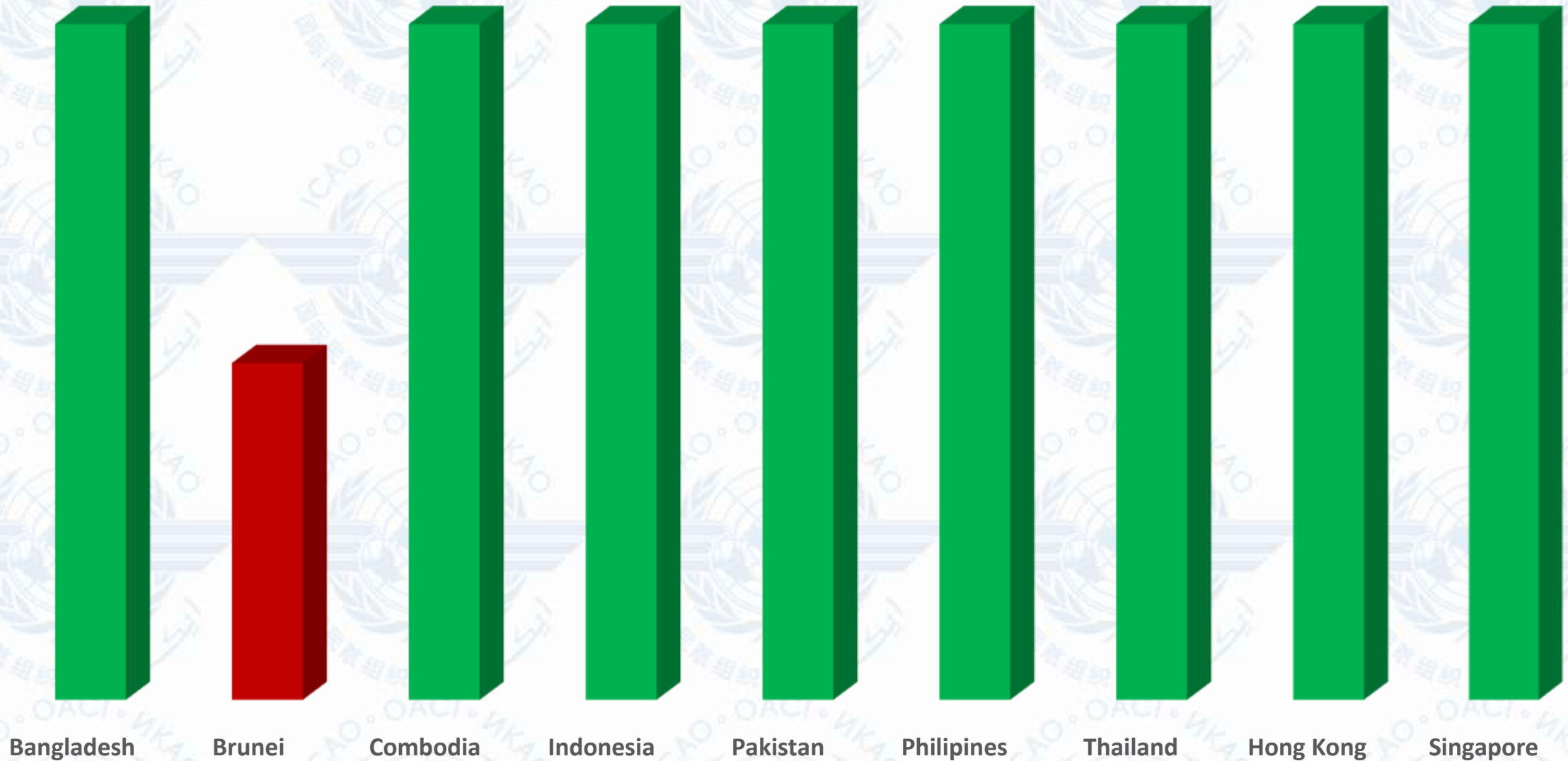
Does the aerodrome operator conduct pest management on the airfield and use chemicals for minimizing big insect (e.g. bird food species) activities and small mammals (e.g. rodents) activities?



Response - NO ; YES

## Response to Question - 47

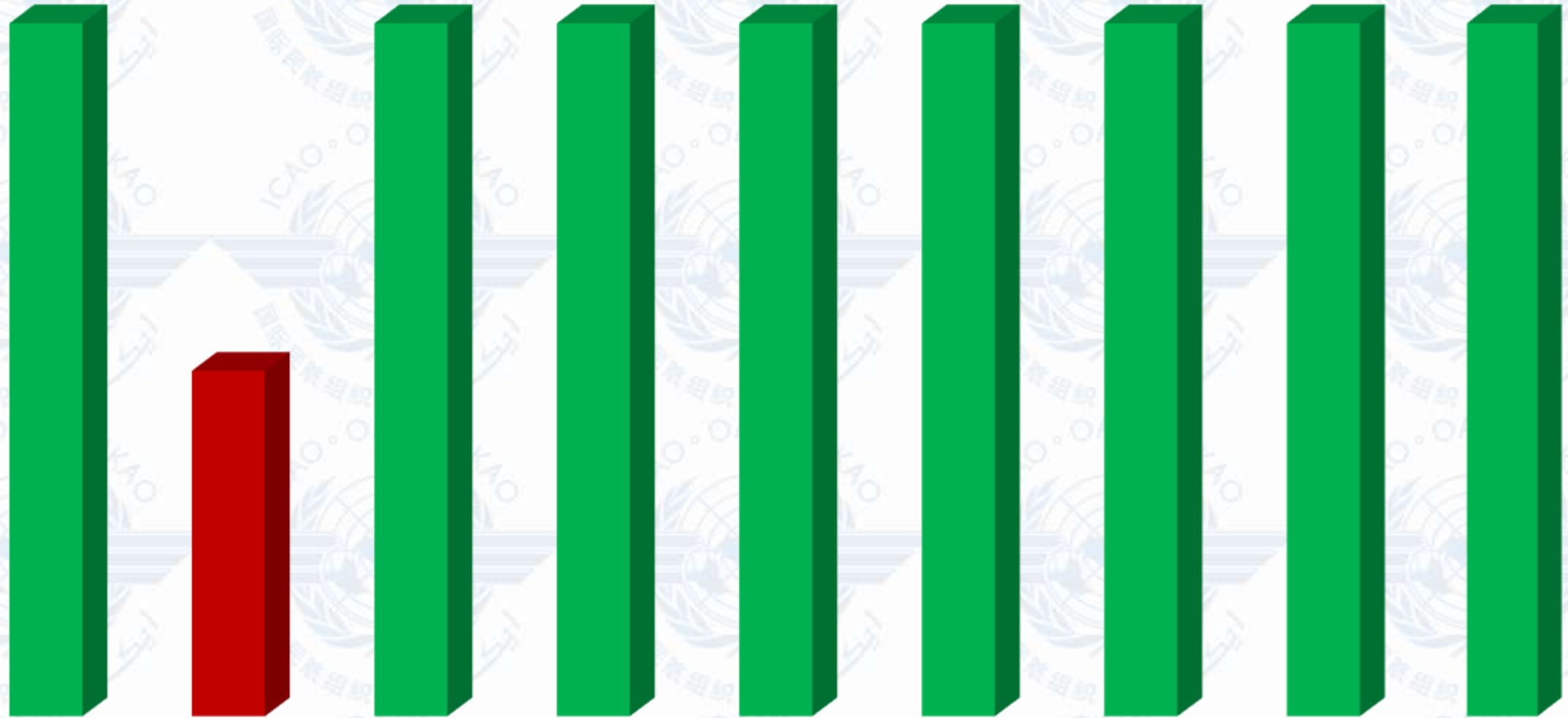
Are buildings kept free of wildlife nesting at the aerodrome?



Response - NO ; YES

## Response to Question - 48

Does the aerodrome operator have a grass maintenance policy?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

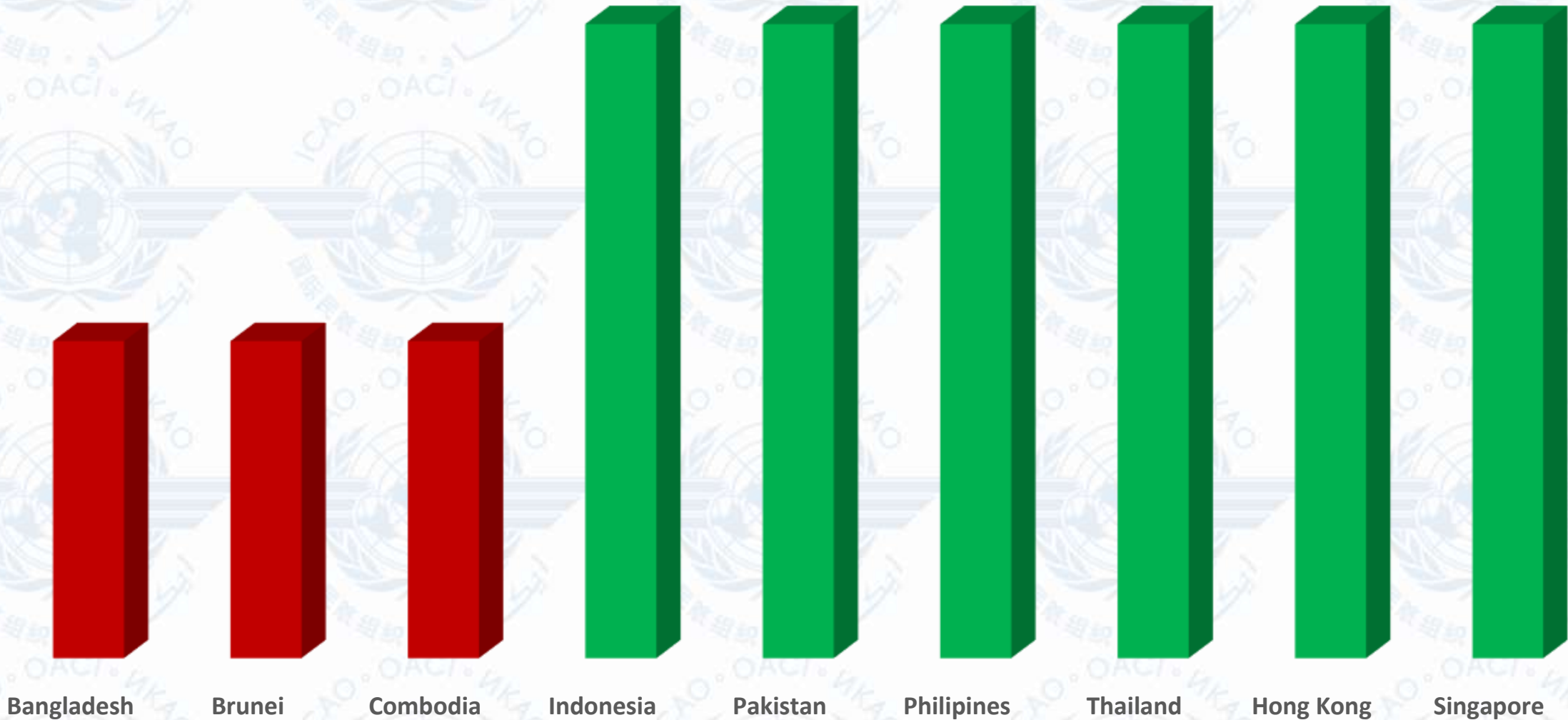
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 49

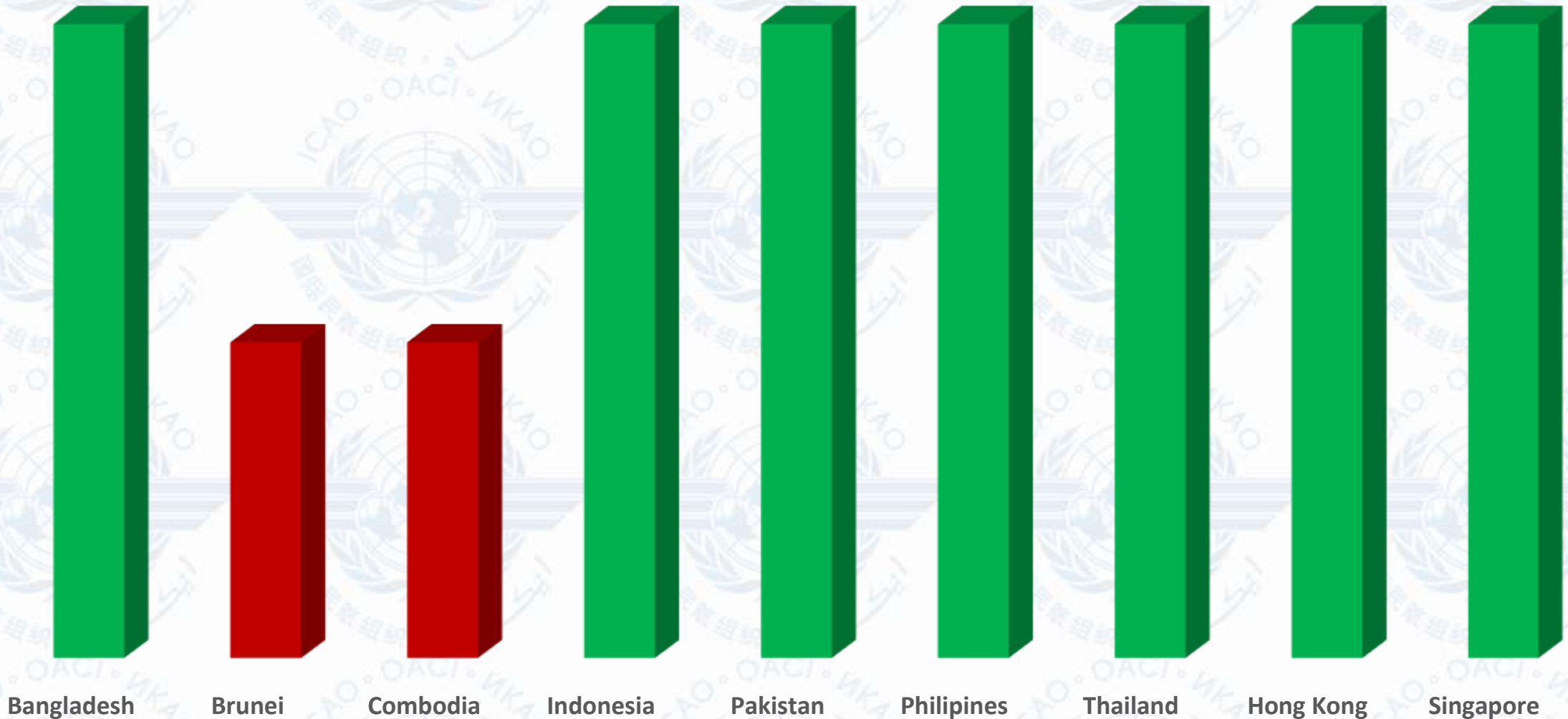
Does the aerodrome operator avoid or limit the habitat for rodents and snake which attract predatory birds and is there a record maintained?



Response - NO ; YES

## Response to Question - 50

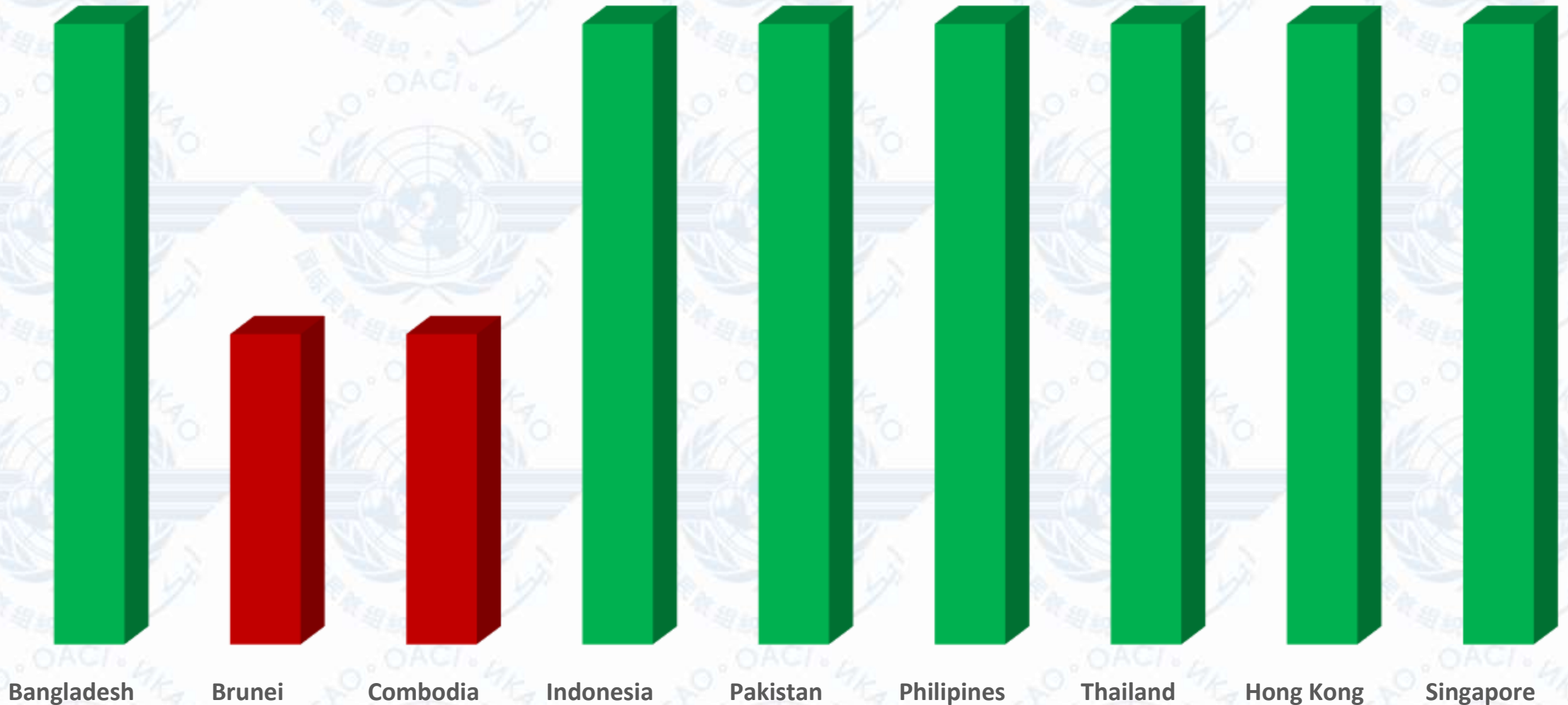
Does the aerodrome operator work with local authorities to ensure that areas outside the aerodrome perimeter do not pose an undue wildlife strike hazard to aircrafts?



Response - NO ; YES

## Response to Question - 51

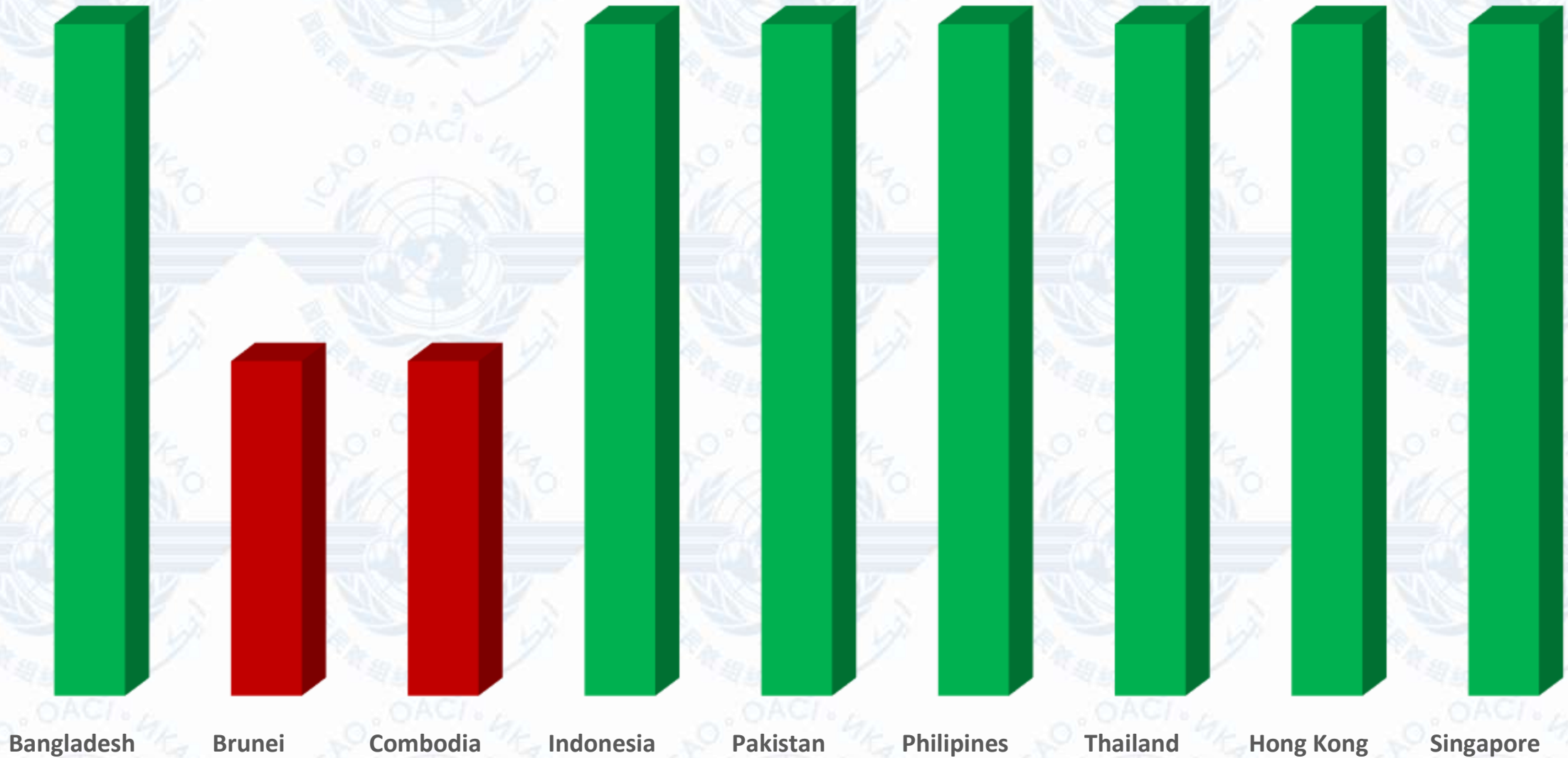
Have public awareness programs been adopted by the aerodrome operator using print media and social media to bring awareness about wildlife strike hazard?



Response - NO ; YES

## Response to Question - 52

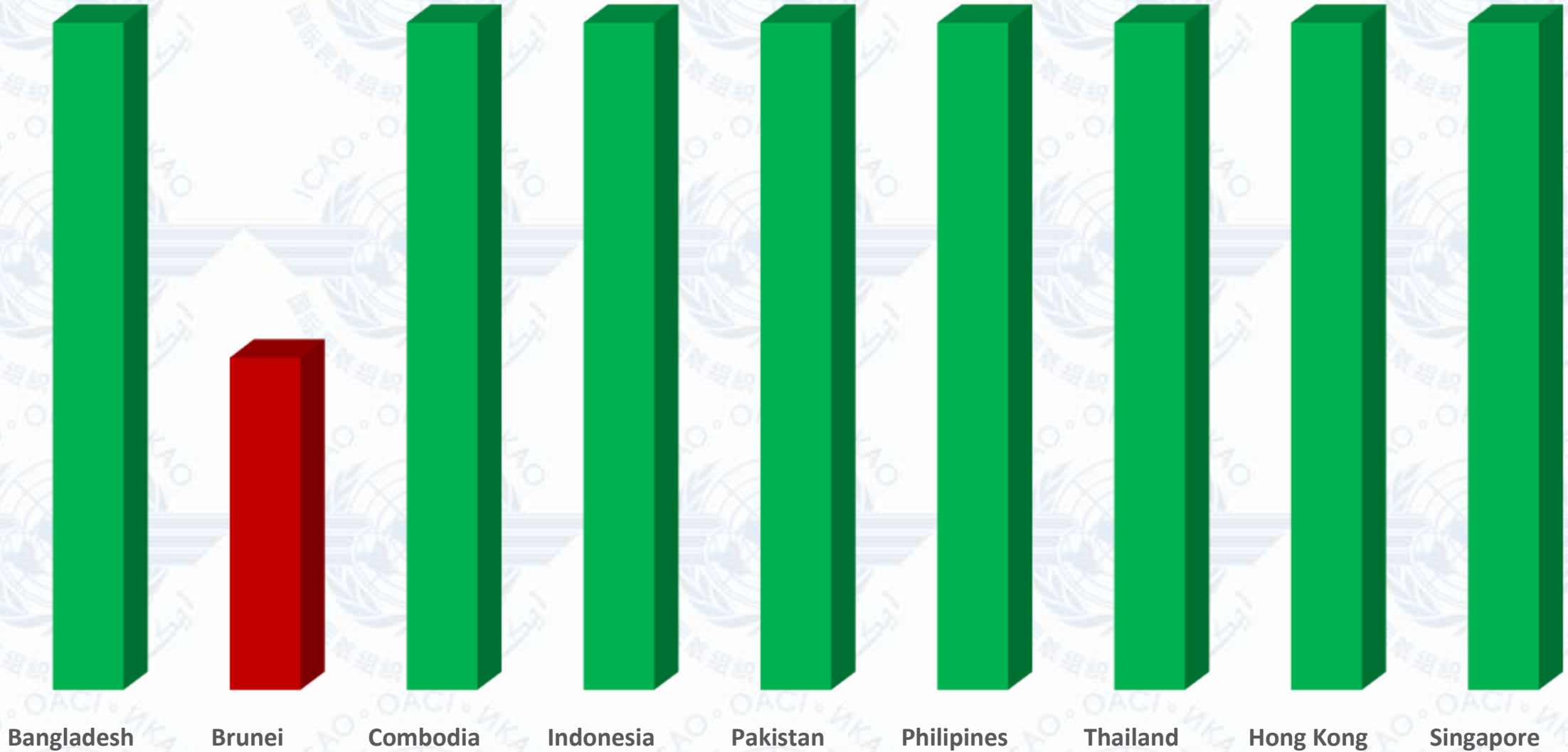
Does the aerodrome operator maintain a record of all wildlife activities?



Response - NO ; YES

## Response to Question - 53

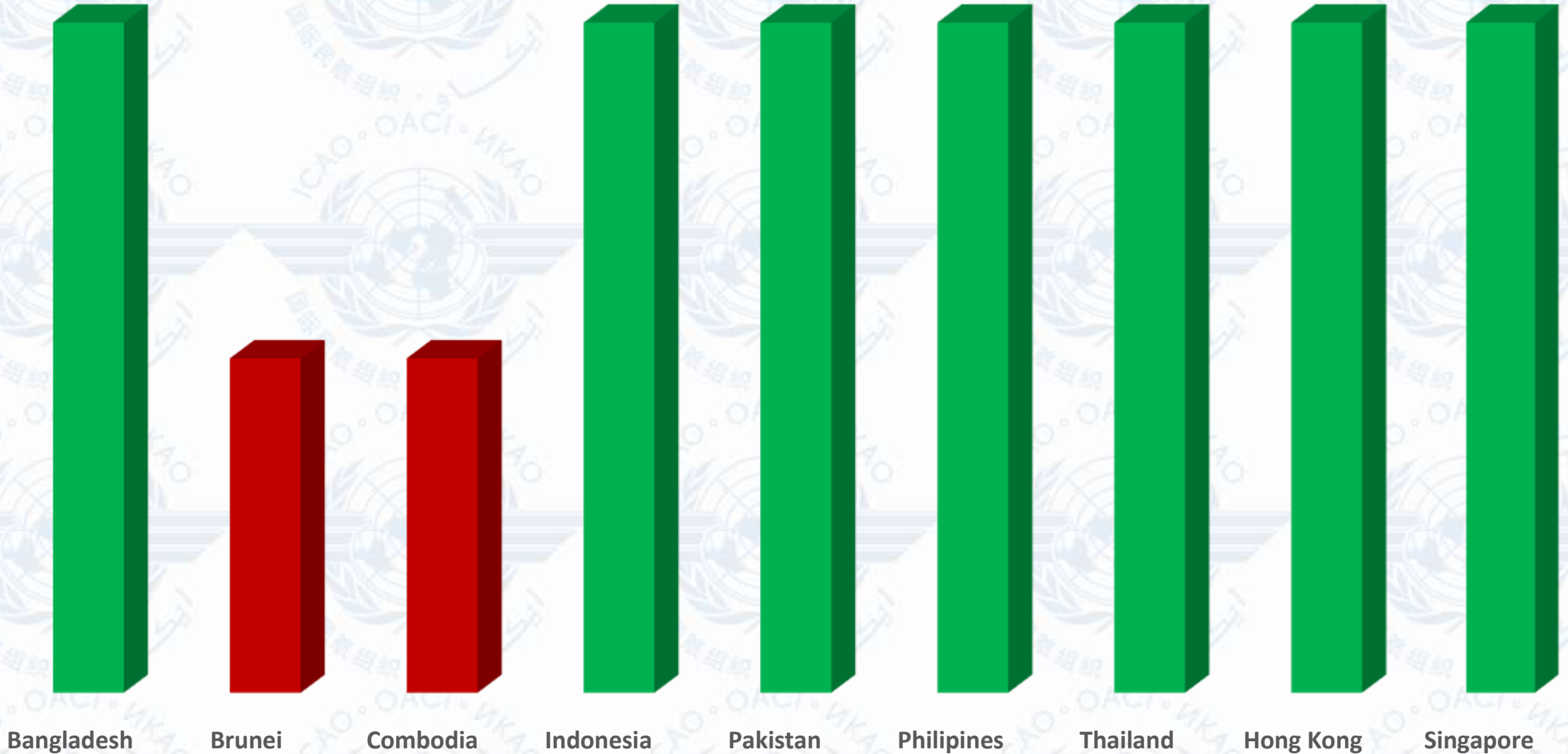
Does the aerodrome operator maintain a record of all confirmed wildlife strikes?



Response - NO ; YES

## Response to Question - 54

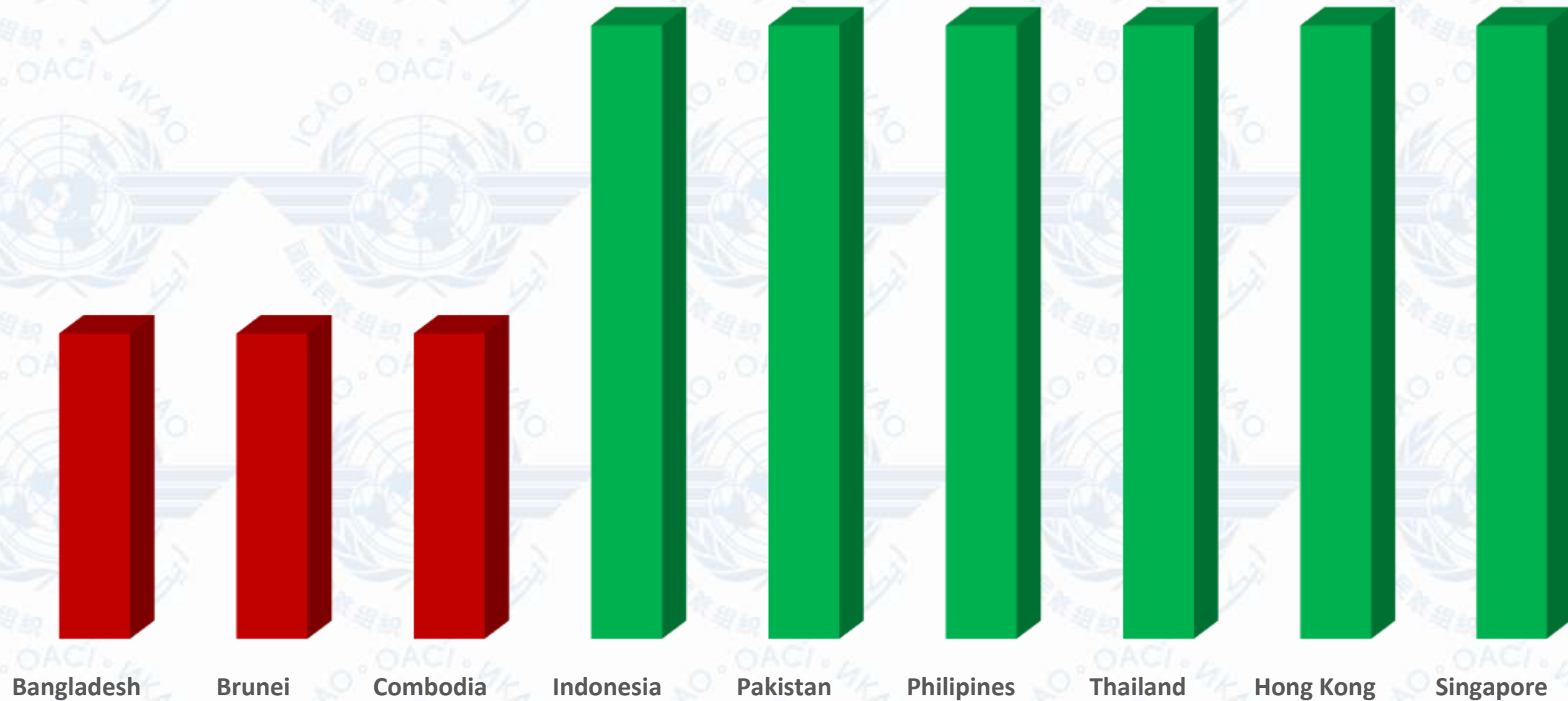
Does the aerodrome operator maintain a record of all unconfirmed wildlife strikes?



Response - NO ; YES

## Response to Question - 55

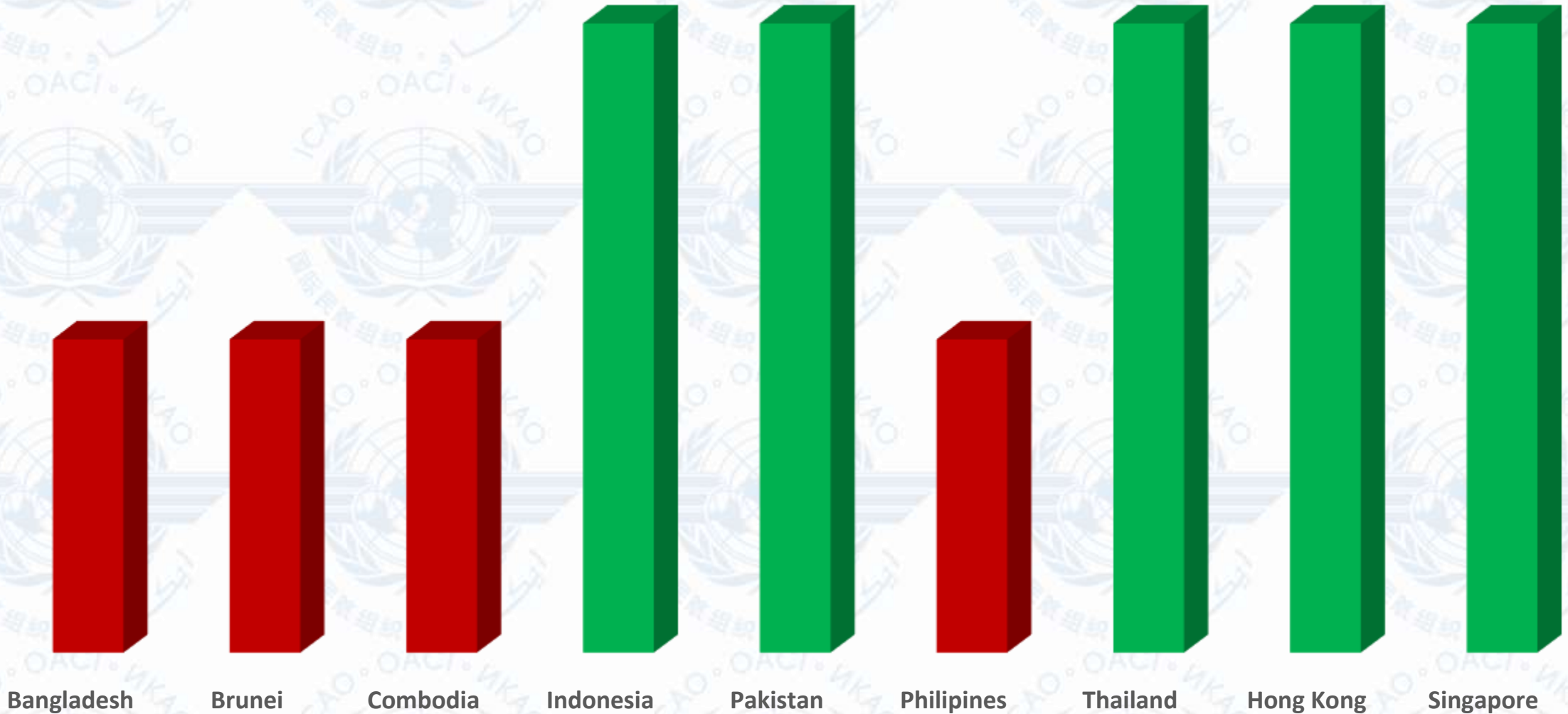
Does the aerodrome operator have a procedure to report confirmed or un-confirmed wildlife strikes to the regulatory authority?



Response - NO ; YES

## Response to Question - 56

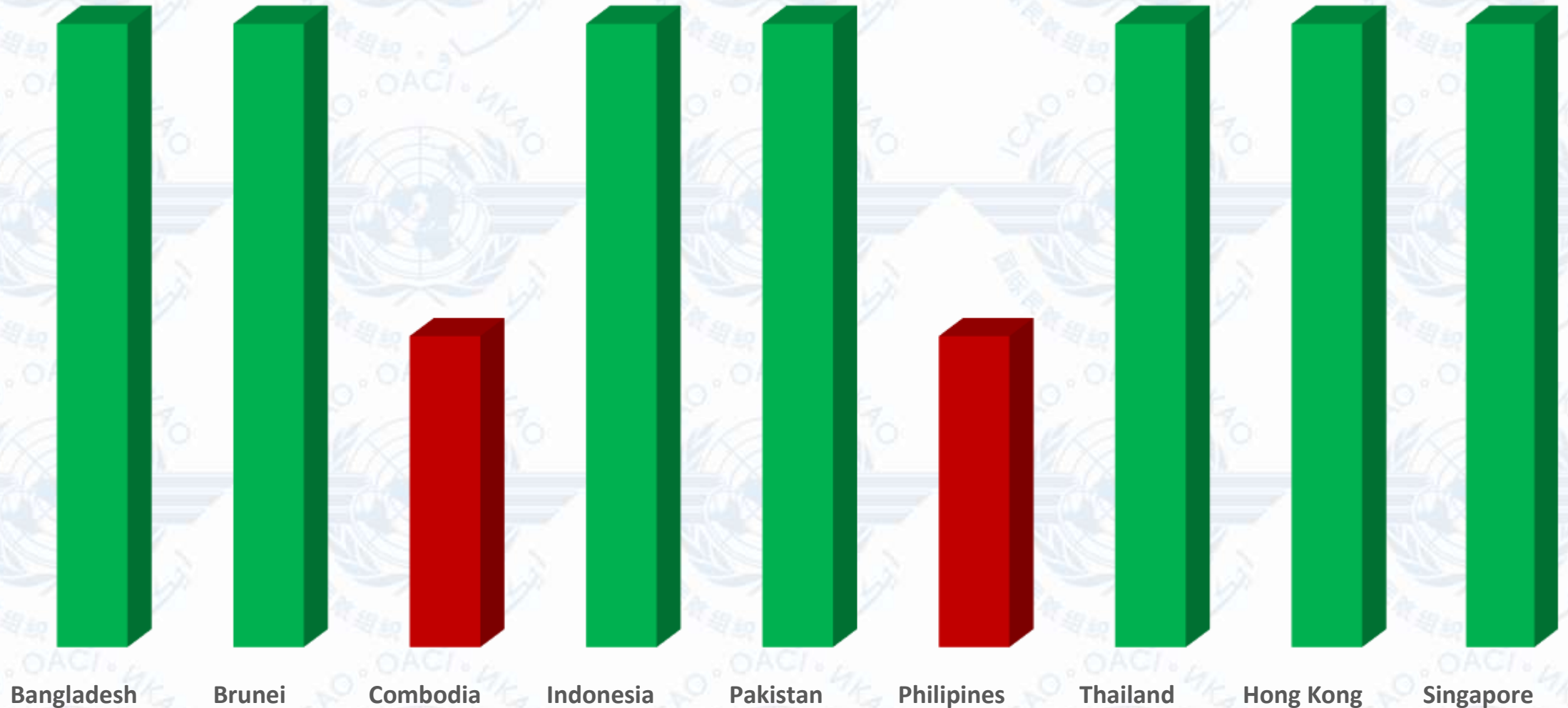
Are wildlife control unit (WCU) personnel equipped with proven knowledge through education or training courses, of wildlife identification?



Response - NO ; YES

## Response to Question - 57

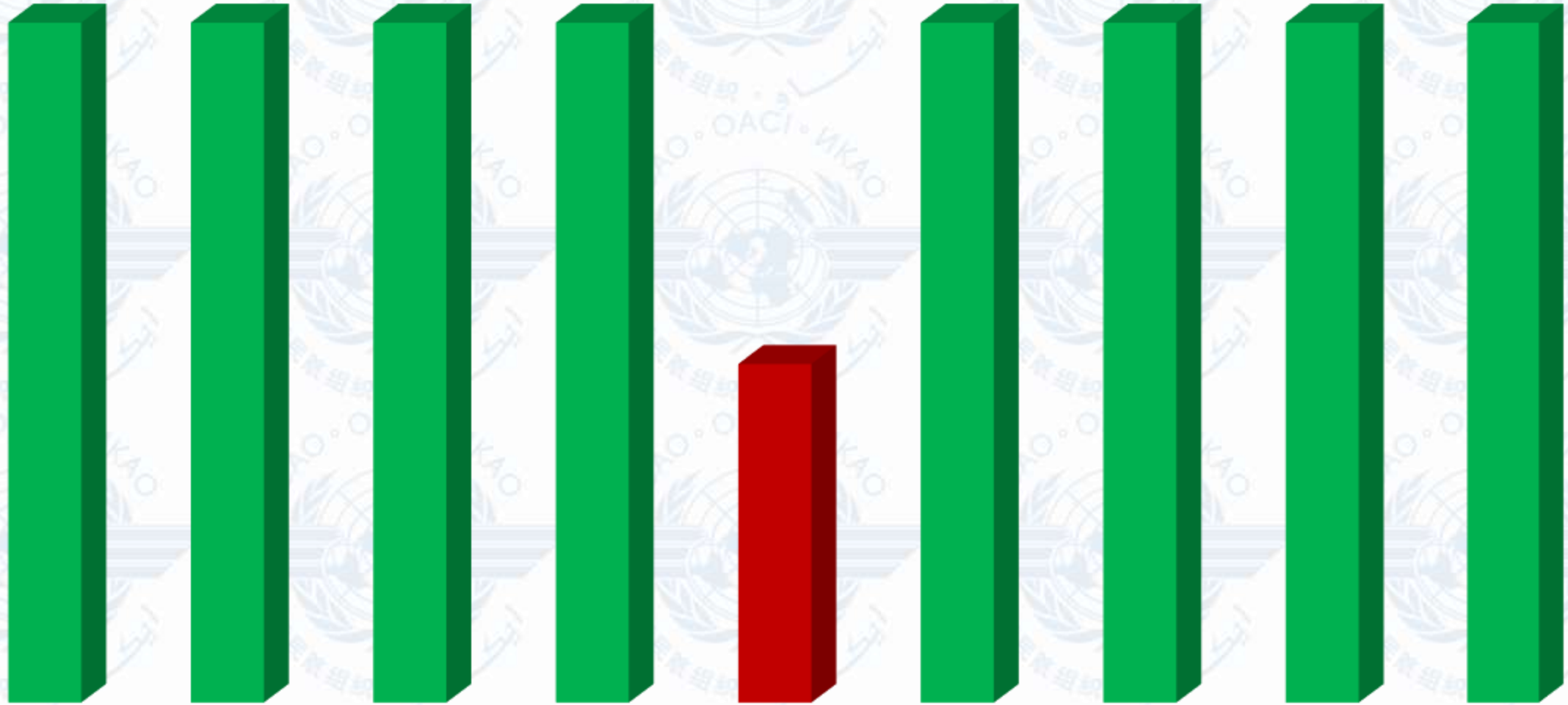
Do WCU personnel use binocular and field guides for wildlife identification logs regularly/everyday?



Response - NO ; YES

## Response to Question - 58

Does the wildlife log contain numbers, species and location of wildlife seen?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

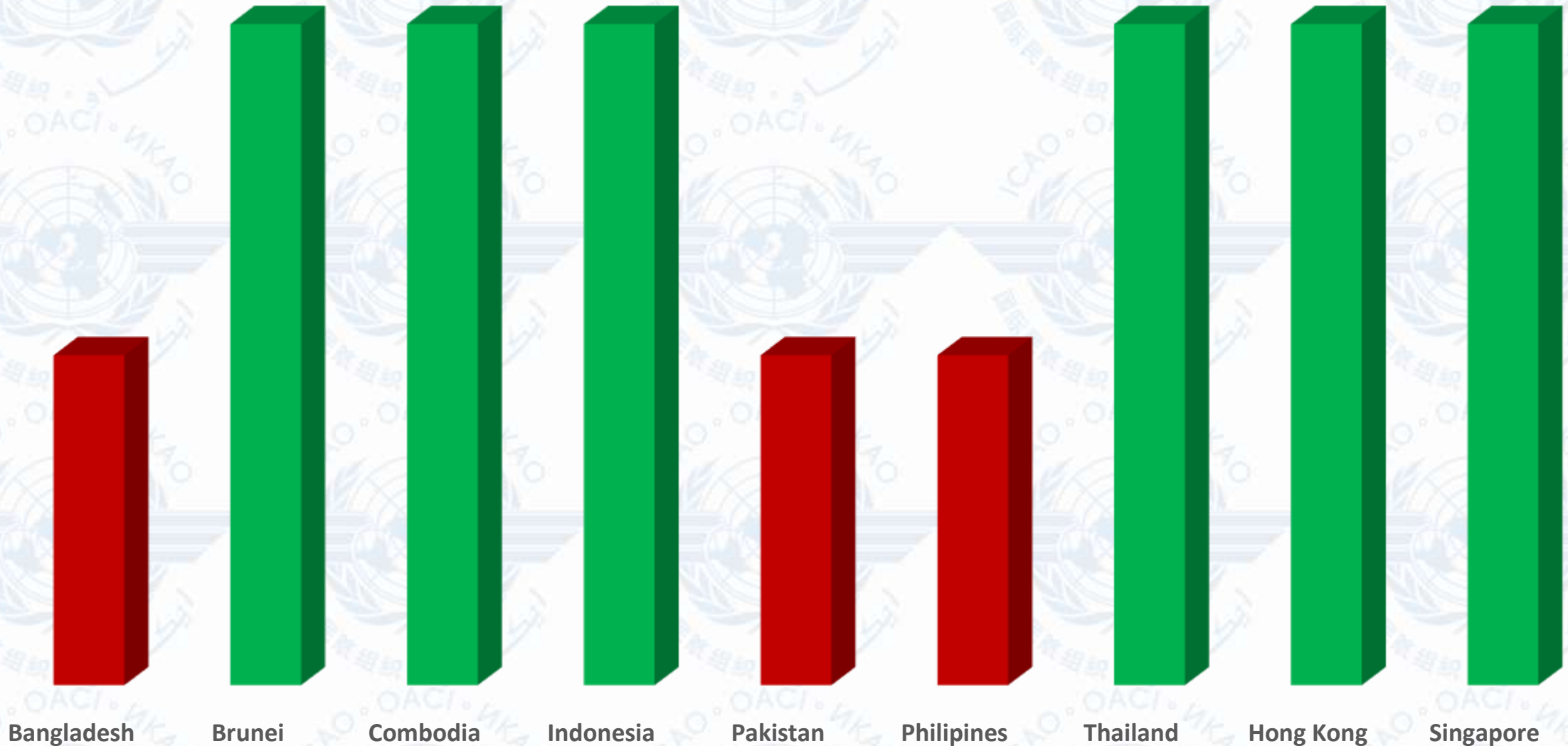
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 59

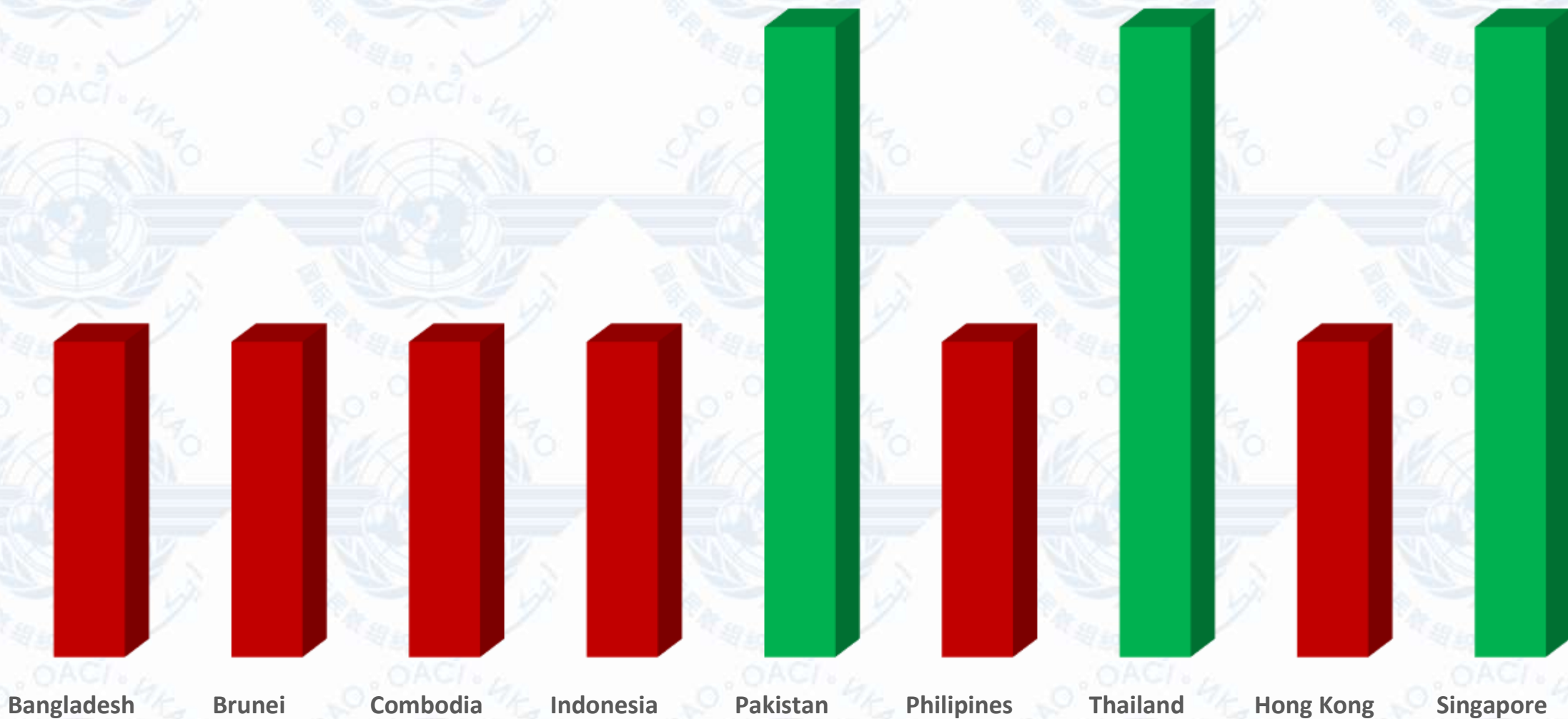
Does the wildlife log contain actions taken to disperse wildlife and results of these actions?



Response - NO ; YES

## Response to Question - 60

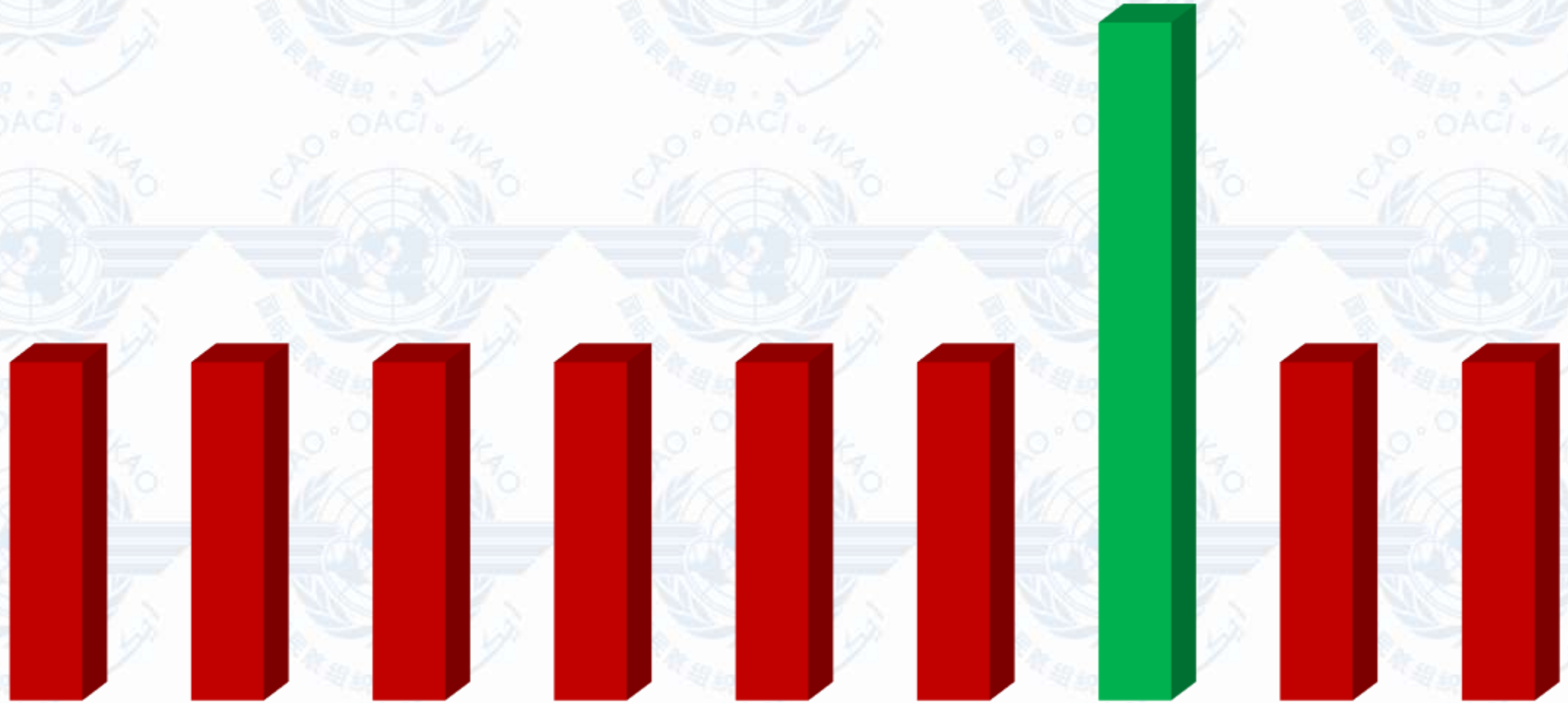
Does the aerodrome operator have a wildlife dispersal report to monitor wildlife dispersal patterns?



Response - NO ; YES

## Response to Question - 61

Does the aerodrome operator have live GPS activity reporting?



Bangladesh

Brunei

Combdia

Indonesia

Pakistan

Philippines

Thailand

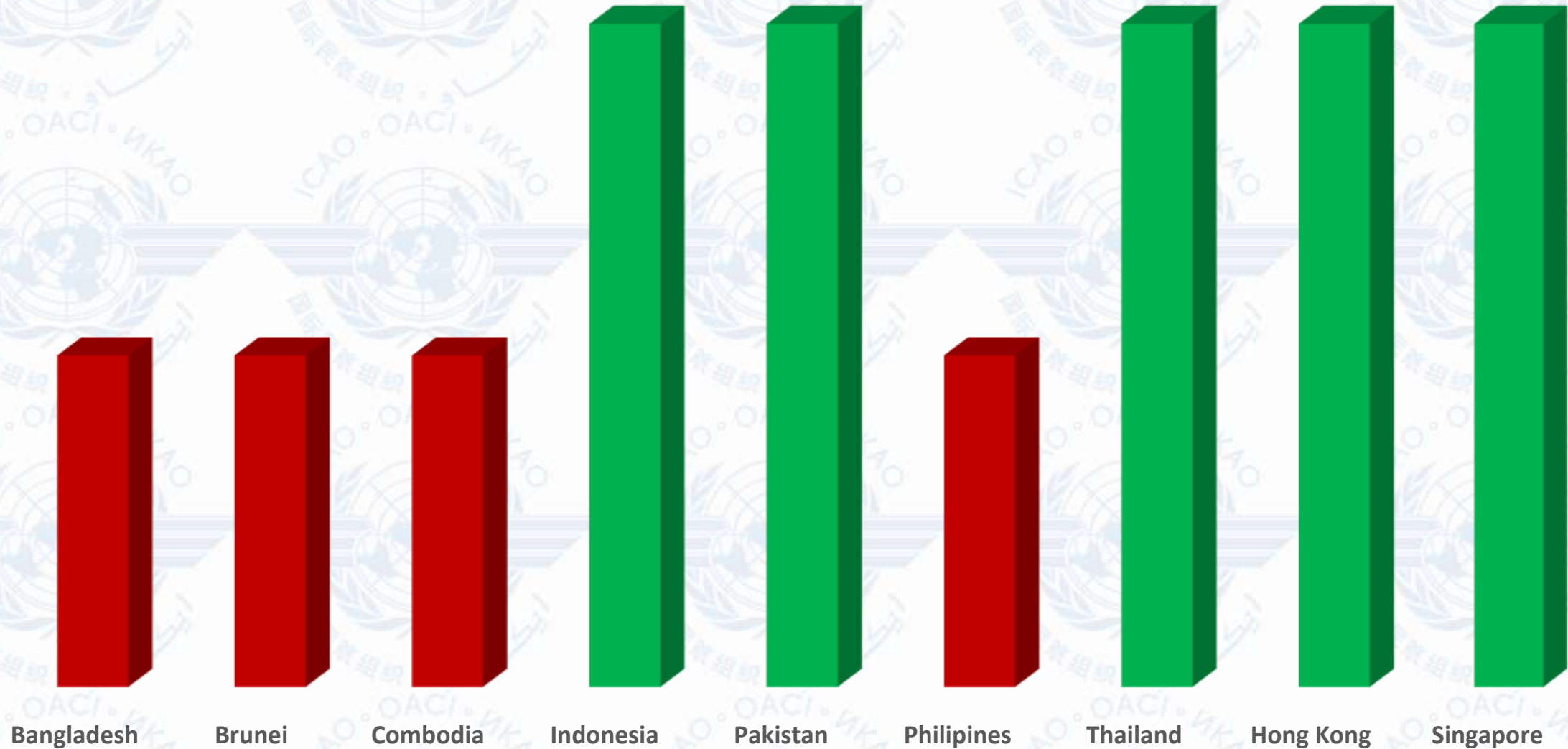
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 62

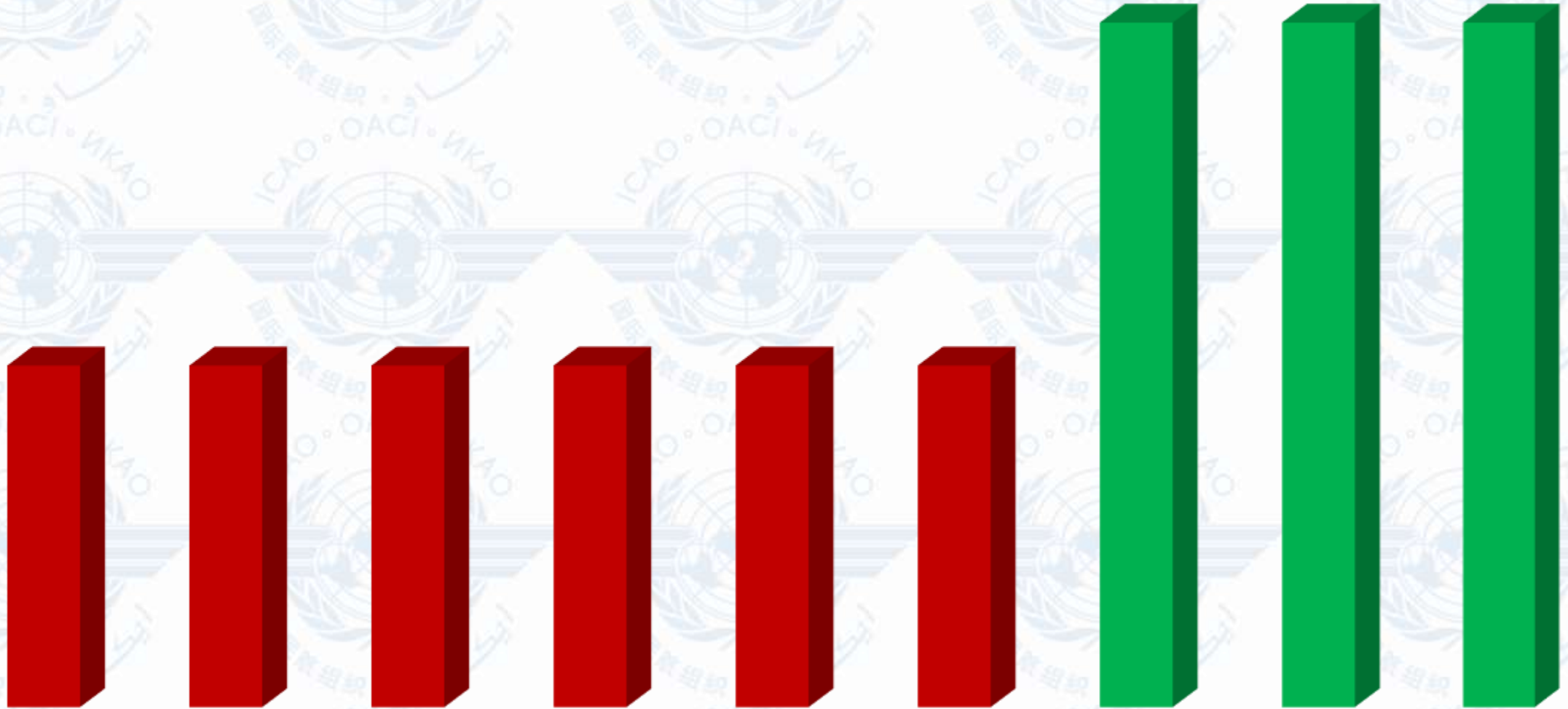
Is the wildlife log completed at regular intervals by competent WCU personnel?



Response - NO ; YES

## Response to Question - 63

Does the aerodrome operator use technology to record wildlife activity?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

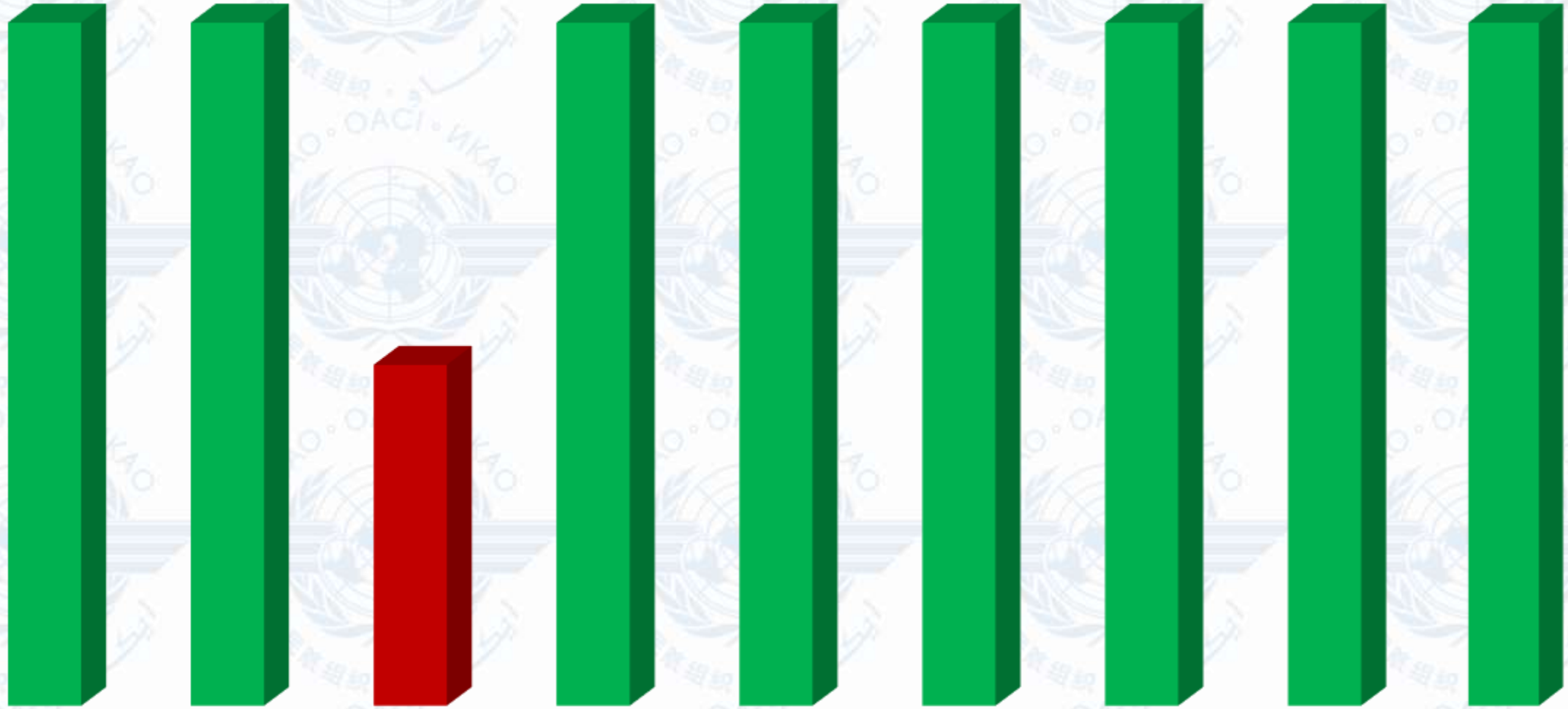
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 64

Does the aerodrome operator manually record wildlife activity?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

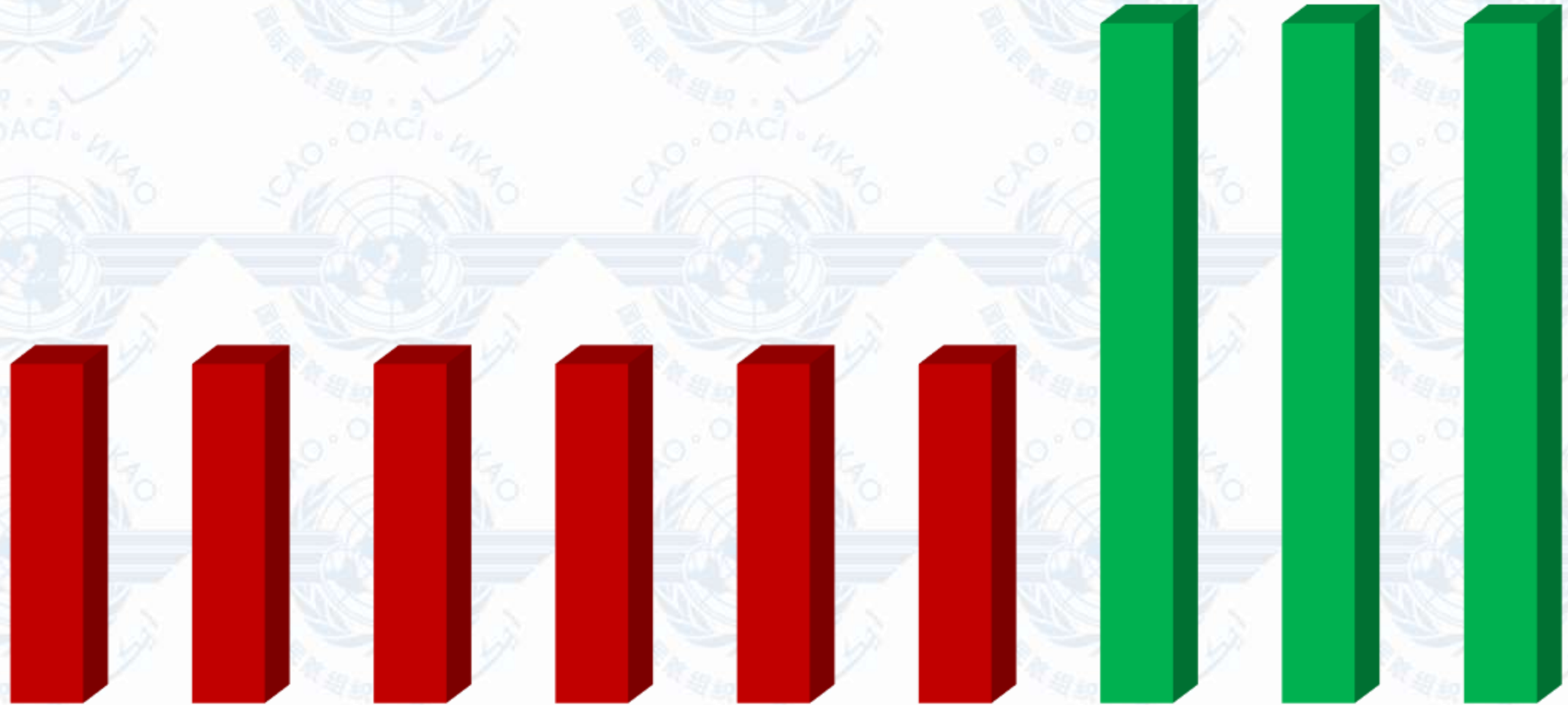
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 65

Does the aerodrome operator use technology to study wildlife activity patterns?



Bangladesh

Brunei

Cambodia

Indonesia

Pakistan

Philippines

Thailand

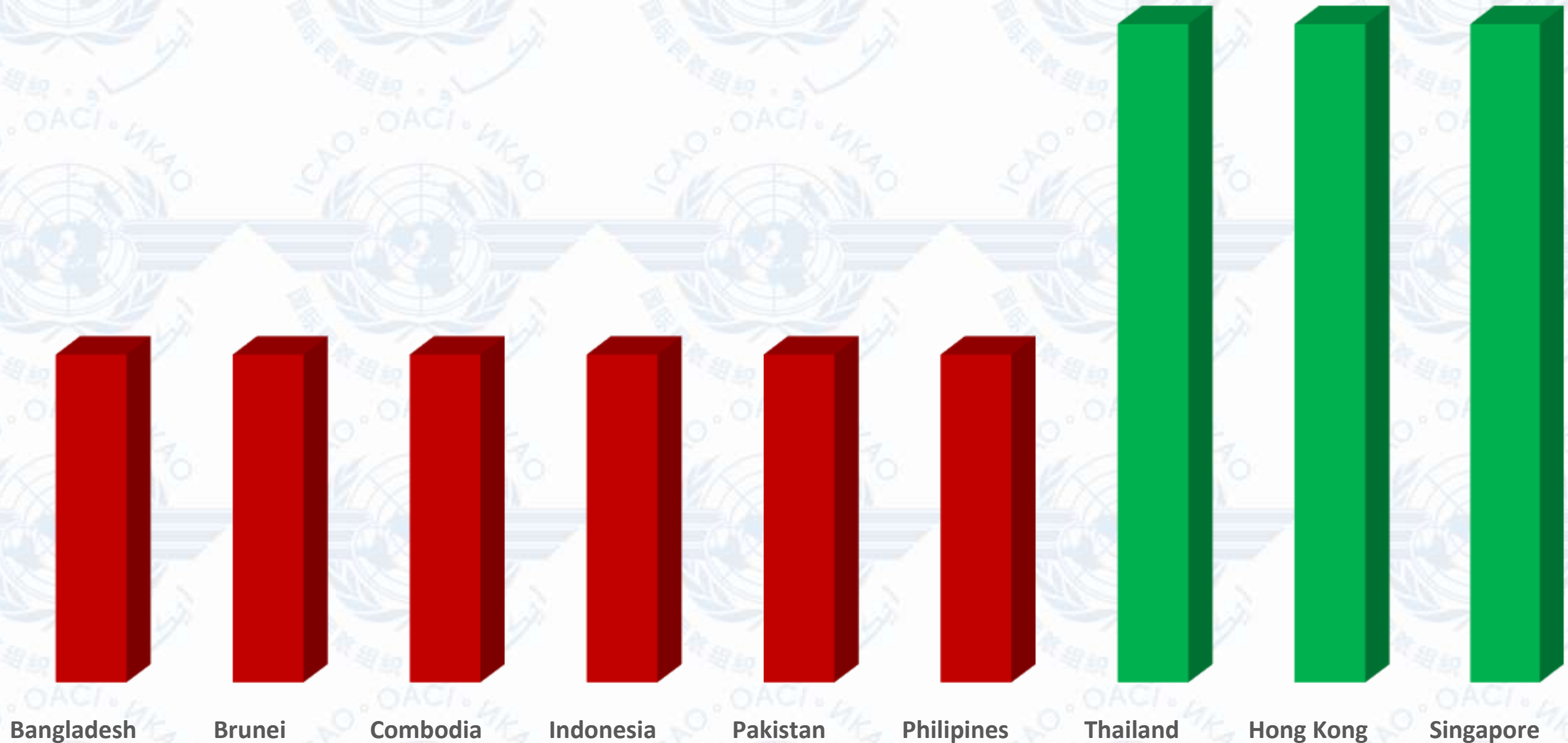
Hong Kong

Singapore

Response - NO ; YES

## Response to Question - 66

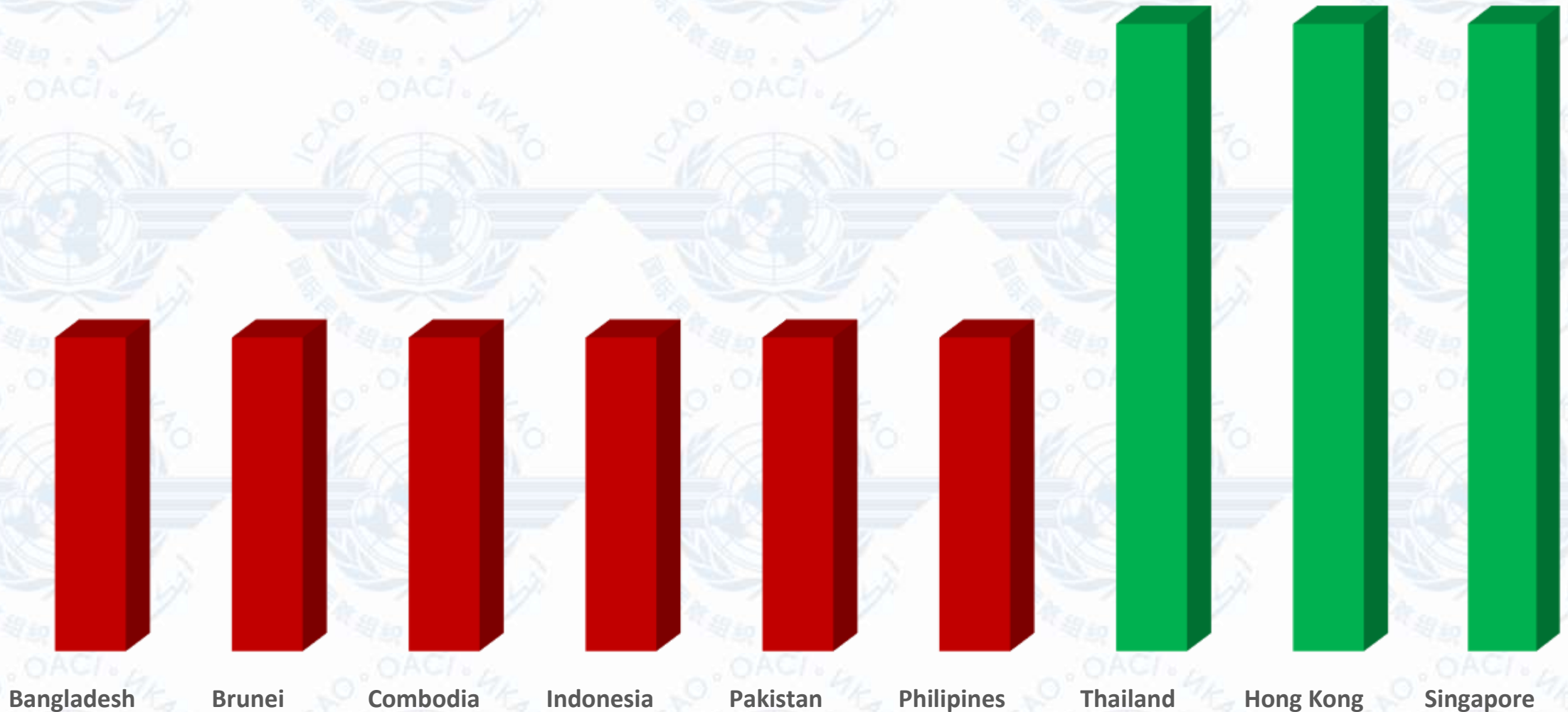
Does the aerodrome operator maintain a dashboard of wildlife activity/pyrotechnics used?



Response - NO ; YES

## Response to Question - 67

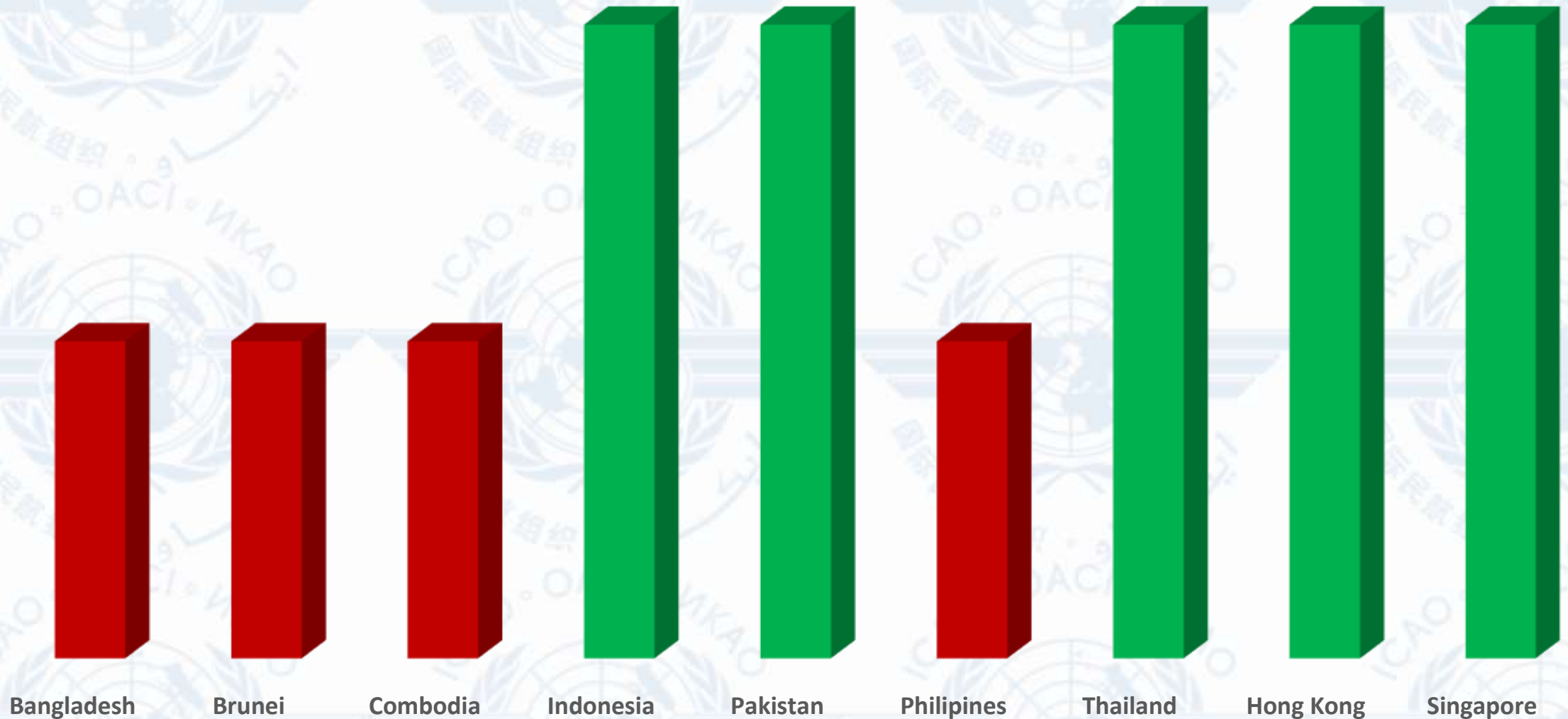
Can aerodrome operator calculate probability of wildlife strike based on activity and number of flights?



Response - NO ; YES

## Response to Question - 68

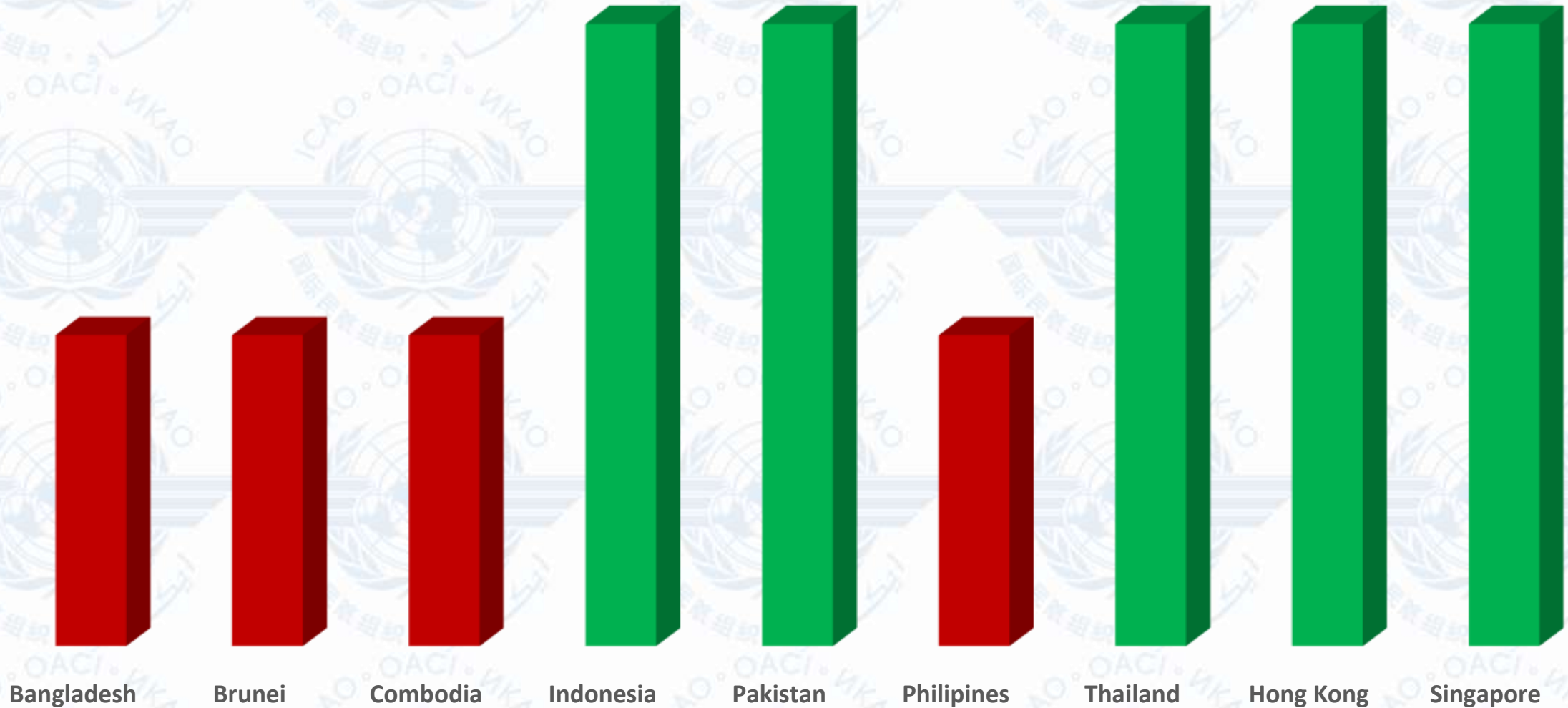
Has the aerodrome operator established system and process for reporting, recording, retrieving the data and analyzing the wildlife strikes and wildlife strike hazard reports?



Response - NO ; YES

## Response to Question - 69

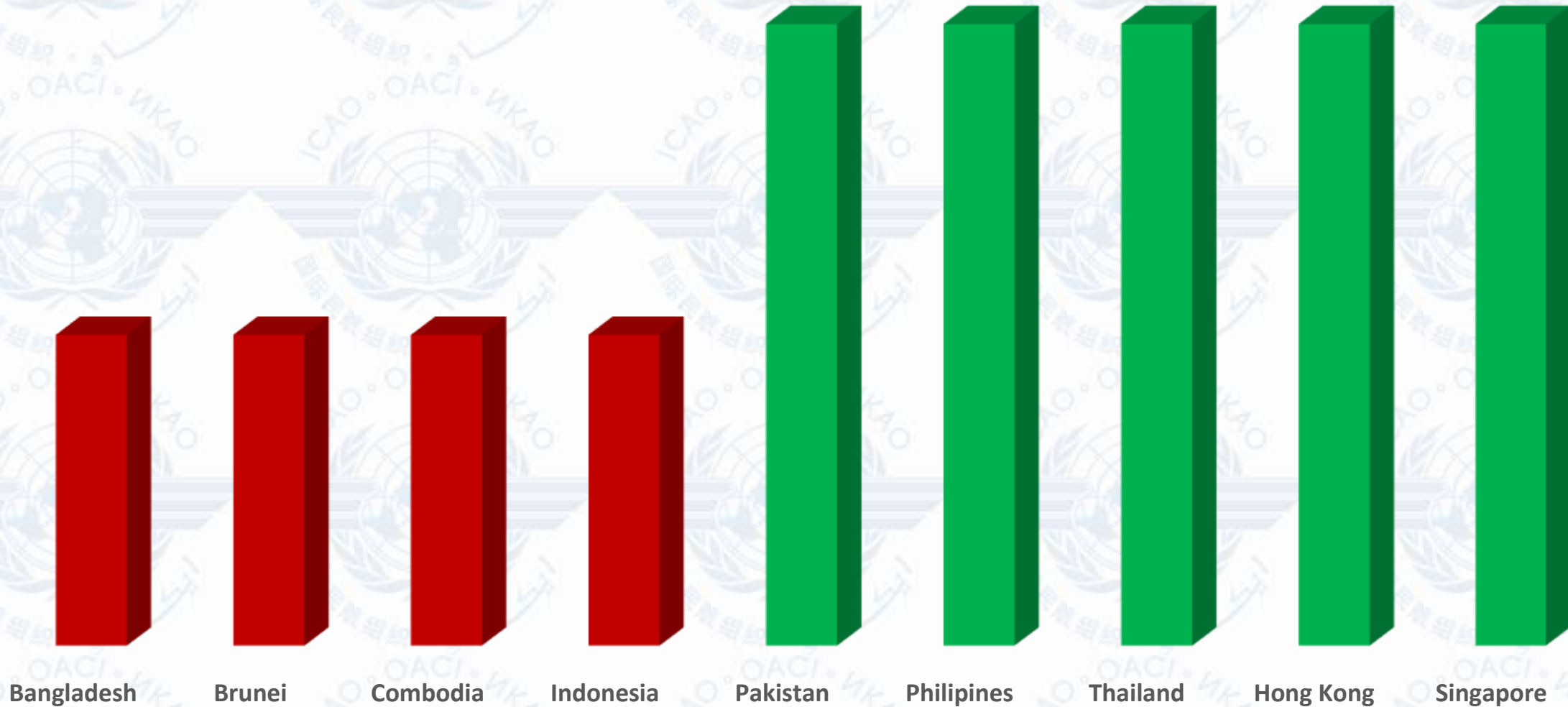
Have aerodrome operators developed mitigation steps in response to outcomes of the wildlife hazard analysis conducted?



Response - NO ; YES

## Response to Question - 70

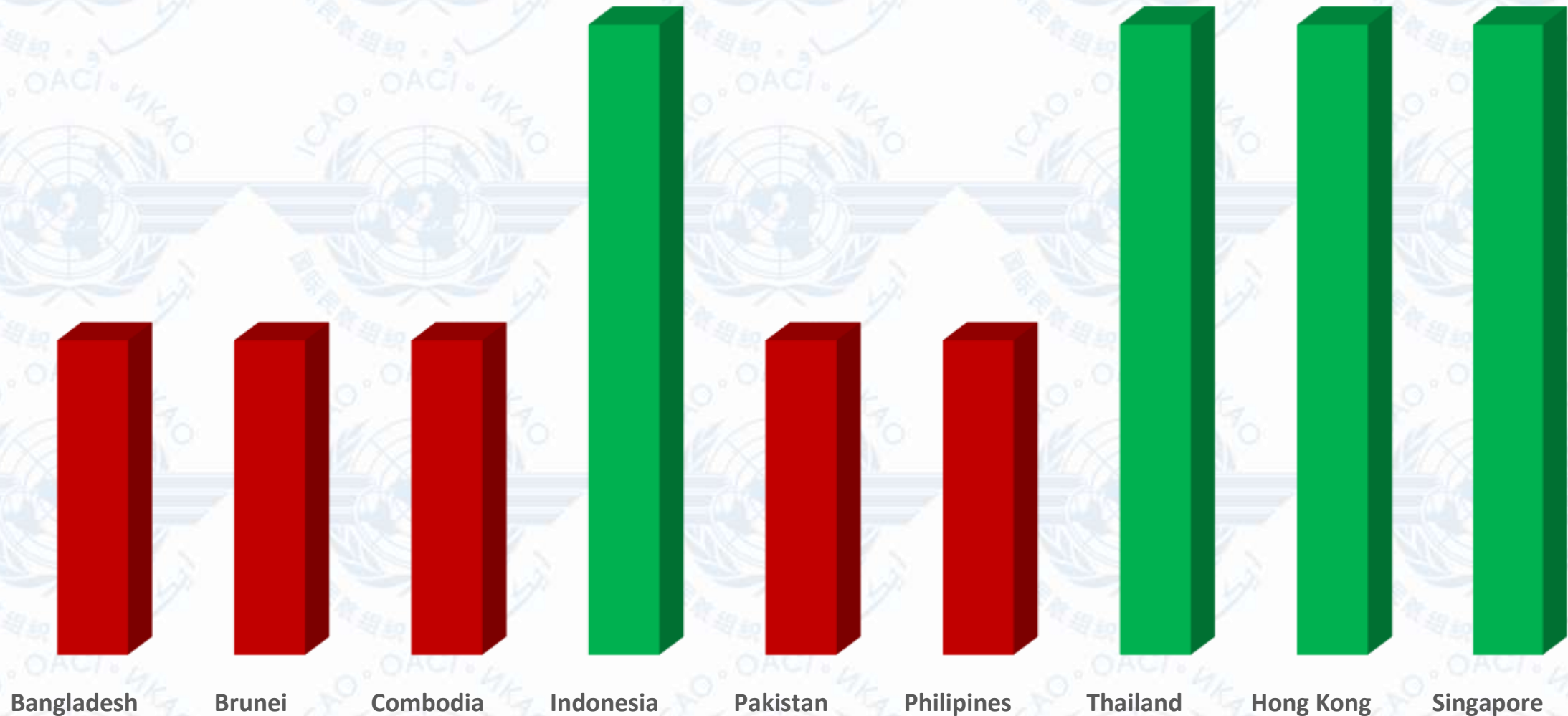
Is wildlife strike data made available to assist other aerodromes in assessing potential new risks, trends and mitigation methods?



Response - NO ; YES

## Response to Question - 71

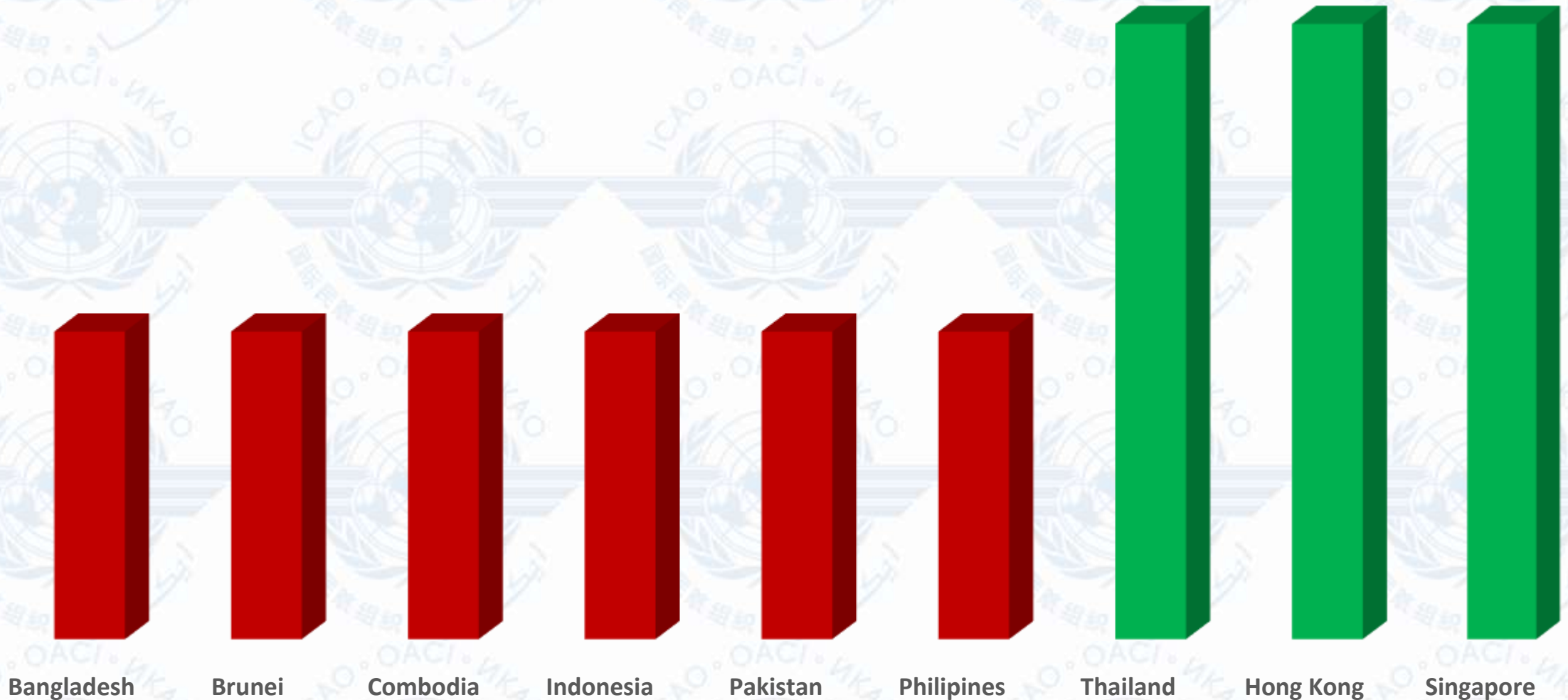
Has the aerodrome operator provided formal training to all personnel prior to initial engagement as wildlife controllers?



Response - NO ; YES

## Response to Question - 72

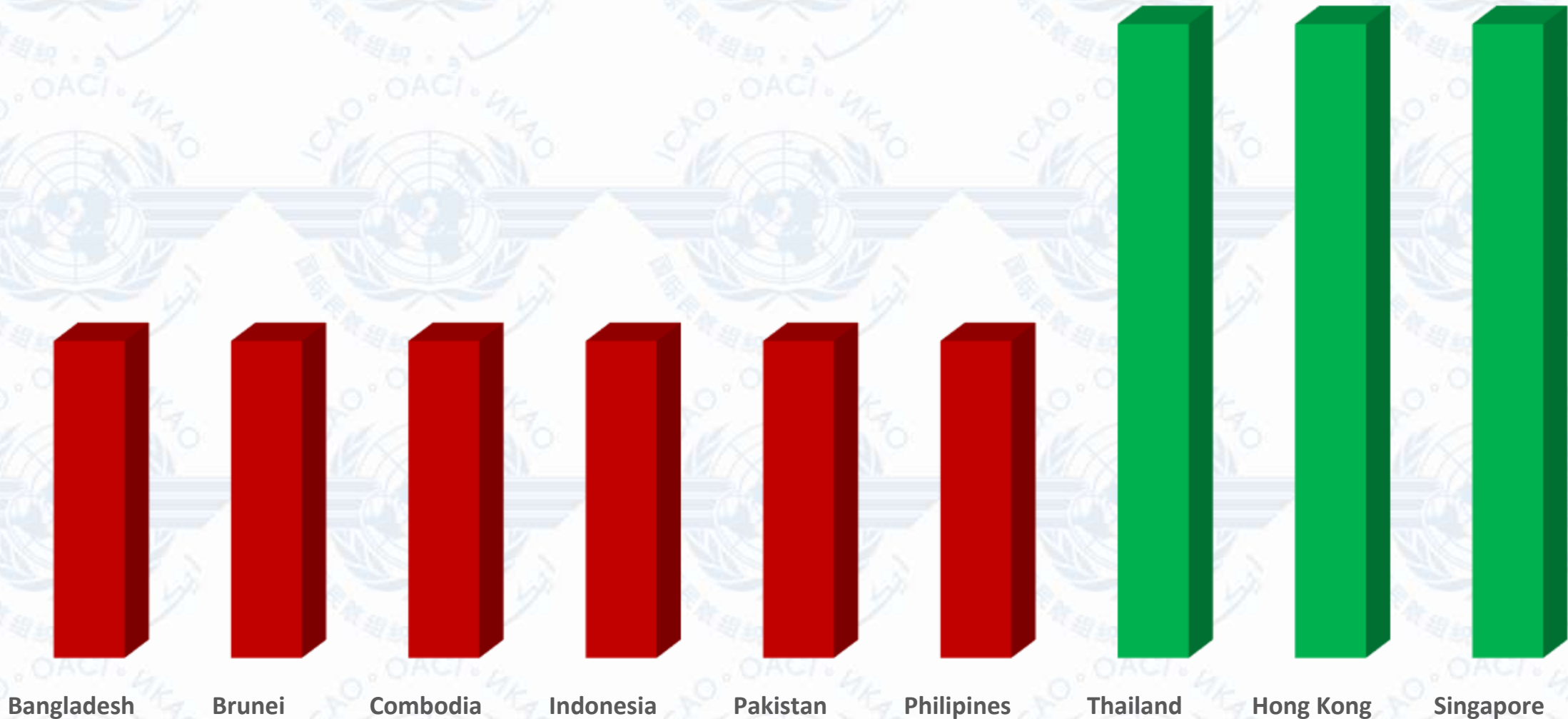
Is the induction and refresher training of staff engaged in wildlife control activities carried out regularly?



Response - NO ; YES

## Response to Question - 73

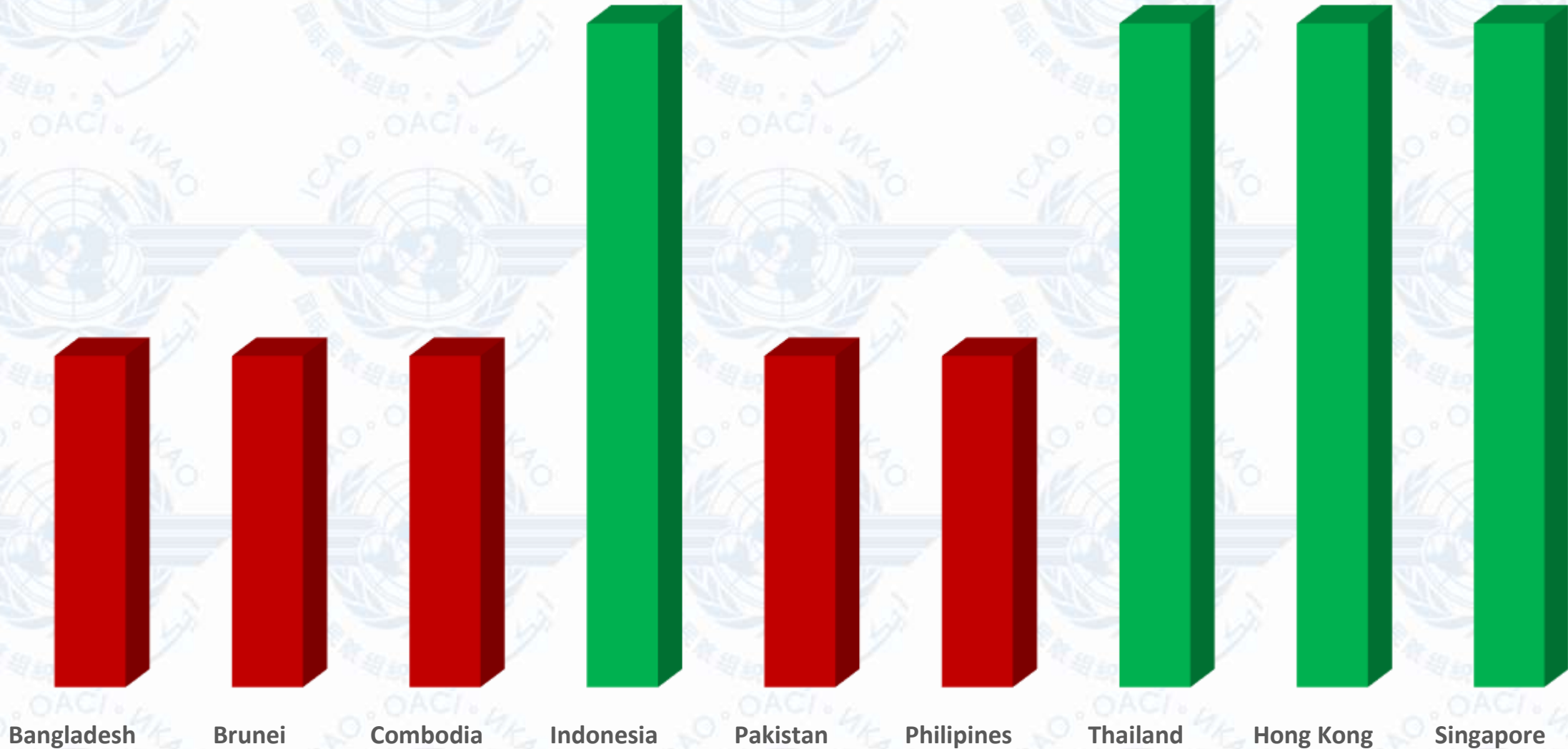
Is the training commensurate with the specific wildlife hazard and size and complexity of the aerodrome operation?



Response - NO ; YES

## Response to Question - 74

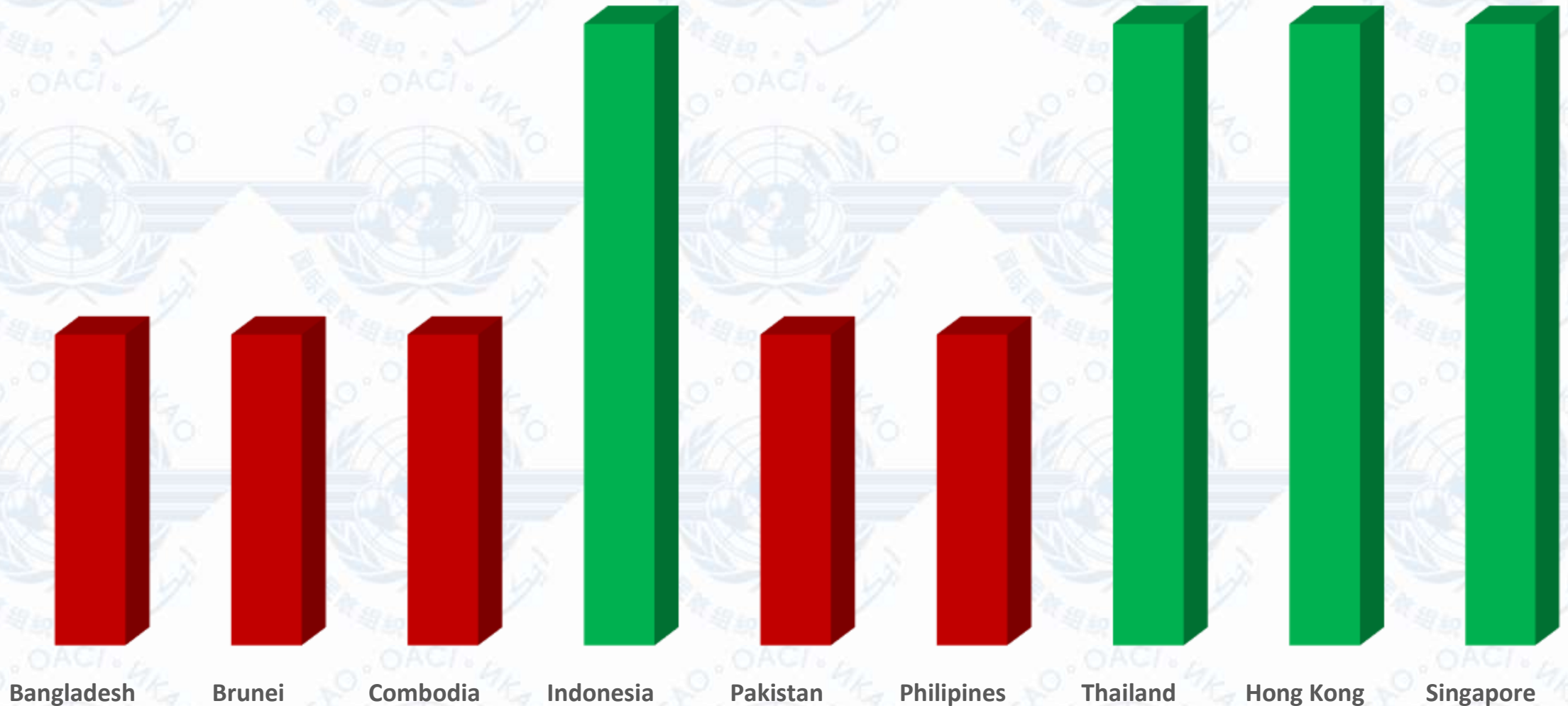
Is the training fully documented and records retained and available for inspection?



Response - NO ; YES

## Response to Question - 75

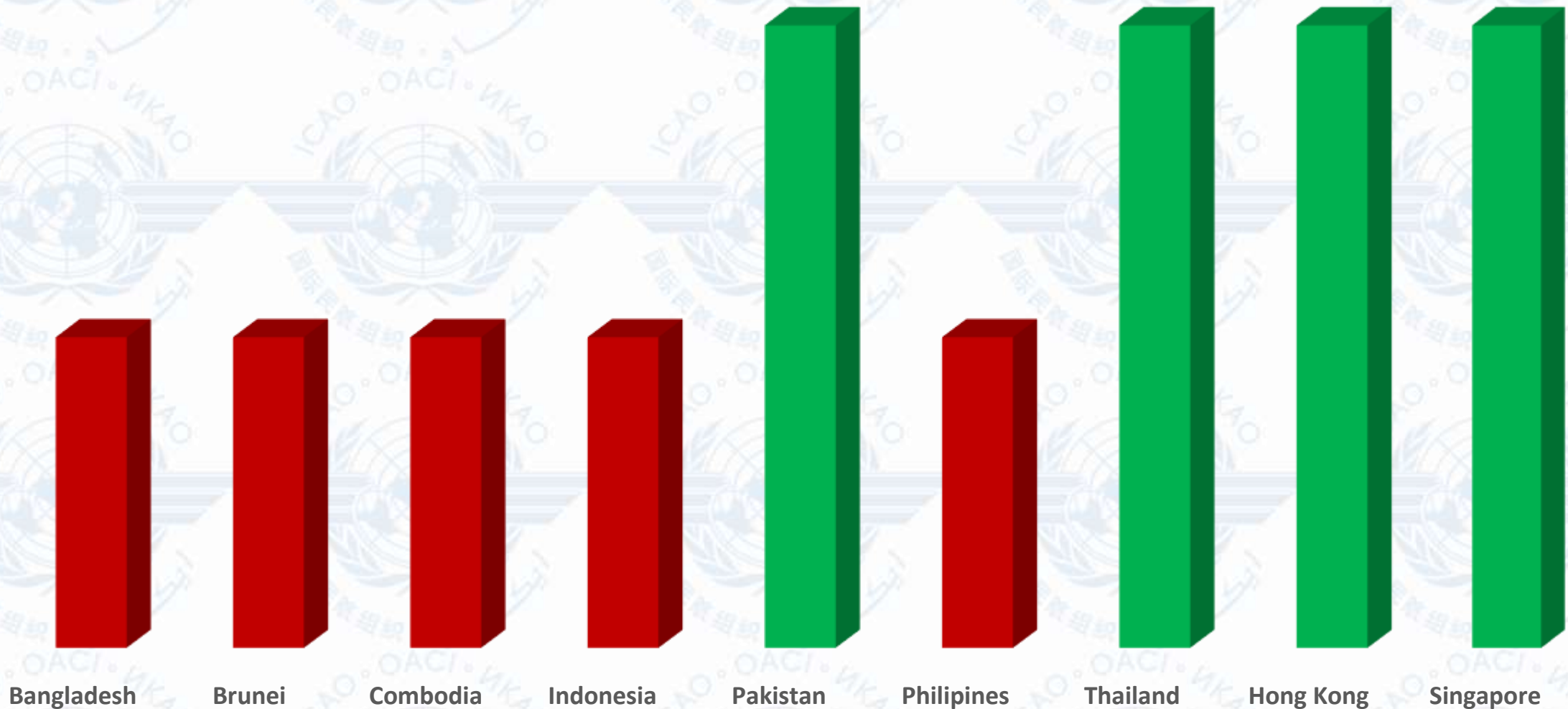
Is the training provided by qualified aerodrome wildlife control personnel or specialists with proven experience in this field?



Response - NO ; YES

## Response to Question - 76

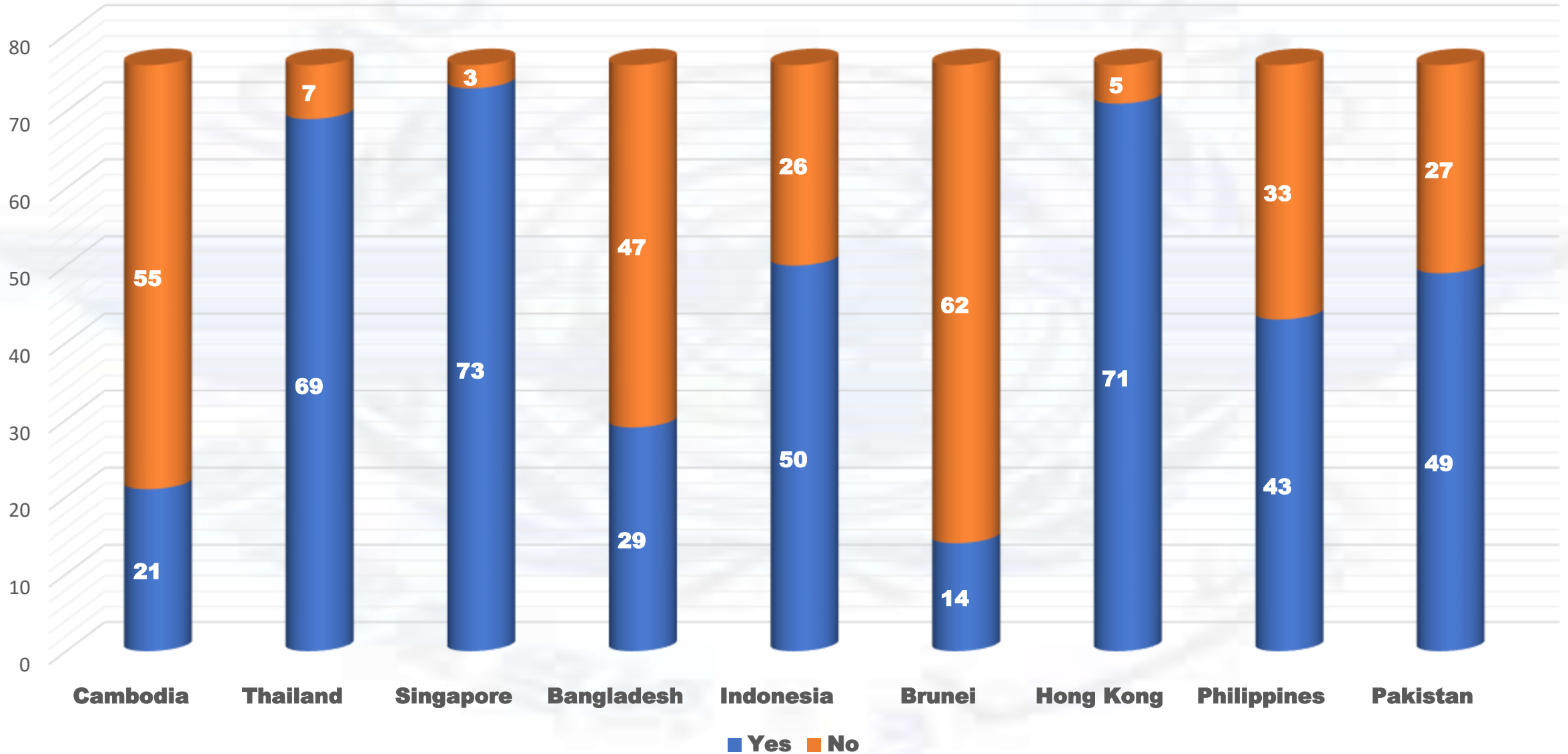
Is feedback considered, and included where relevant and appropriate, in a process of continuous improvement?



Response - NO ; YES

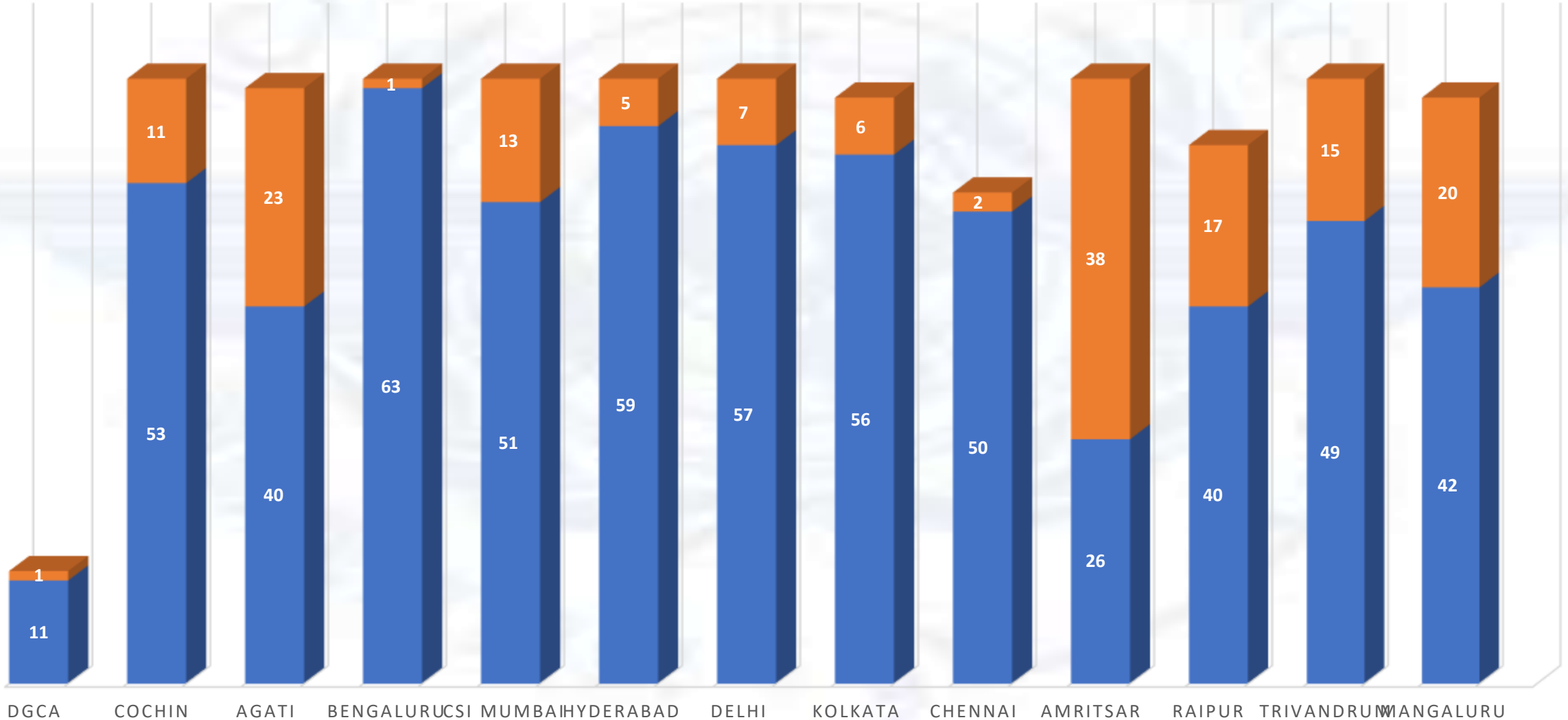
**ICAO ASIA/PACIFIC  
WILDLIFE HAZARD MANAGEMENT WORKING GROUP  
(AP-WHM WG/1)  
Responses to Questions  
Compiled by *World Birdstrike Association***

# Country Wise Responses to Questionnaire - Overview (AP- WHM WG/1)



# INDIA - CONSOLIDATED RESPONSES TO QUESTIONNAIRE OVERVIEW (AP- WHM WG/1)

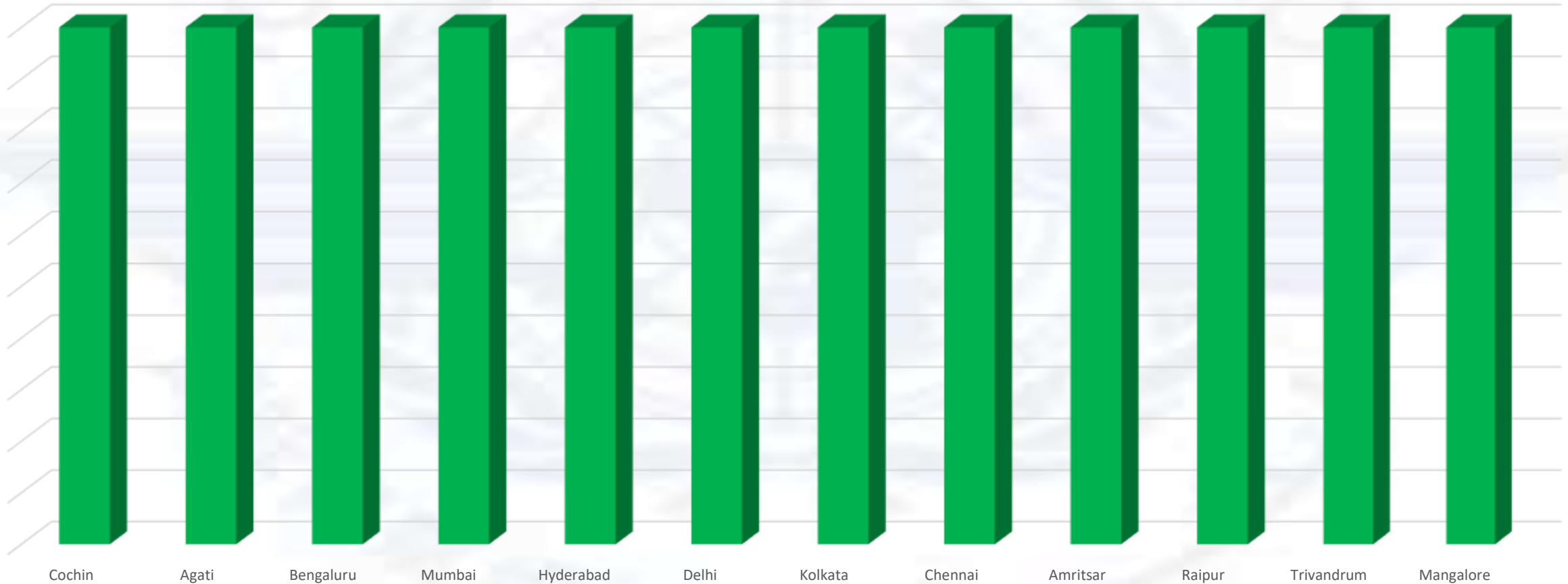
BLUE – YES ; ORANGE = NO



Question No	Question	Response
1.	Has the State promulgated a regulation to control the development of facilities likely to attract wildlife on or in the vicinity of an aerodrome?	yes
2.	Has the State established and implemented a process to mitigate against an increase or potential increase in wildlife strike hazard due to land use development likely to attract wildlife around an aerodrome?	No
3.	Has the State developed industry guidance material to assist aerodrome operators to develop a wildlife (birds and animals) strike hazard study or assessment for each of their aerodromes?	yes
4.	Has the State promulgated regulations to require a wildlife (birds and animals) strike hazard study or assessment for each of its aerodromes?	Yes
5.	Does the State ensure that aerodrome operators take appropriate action to decrease the hazard of wildlife strikes?	yes
6.	Does the State collect and forward wildlife strike reports to ICAO?	Yes
7.	Does the State use the IBIS database to report wildlife strike?	yes
8.	Has the State established National wildlife strike hazards management committee forum including all relevant government organizations to discuss issues related to wildlife hazards on or in the vicinity of an aerodrome(s)?	Yes
9.	Has the State established national wildlife strike hazard reduction action plan/program to reduce the hazard of wildlife strikes?	yes
10.	Has the State established national procedures for evaluation of effectiveness of the Airport Wildlife Hazards Management Program?	yes
11.	Does the State ensure that CAA/DGCA aerodrome inspectors are well versed with wildlife hazard management requirements at aerodromes?	yes
12.	Is the wildlife hazard management plan part of the aerodrome certification/licensing requirements?	yes

# Response to Question - 13

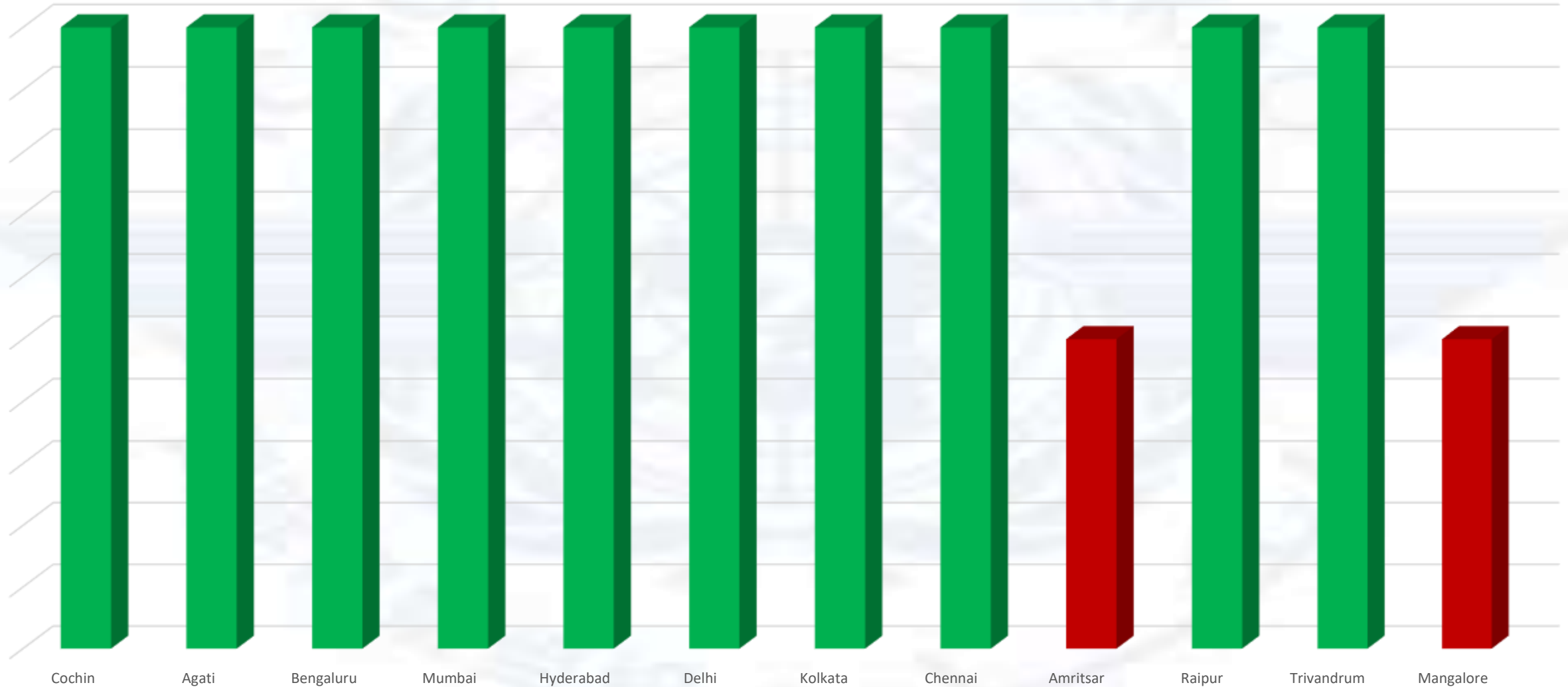
Has the Aerodrome Operator developed an airfield wildlife hazard management program and implemented it?



Green = Yes ; Red = No

## Response to Question - 14

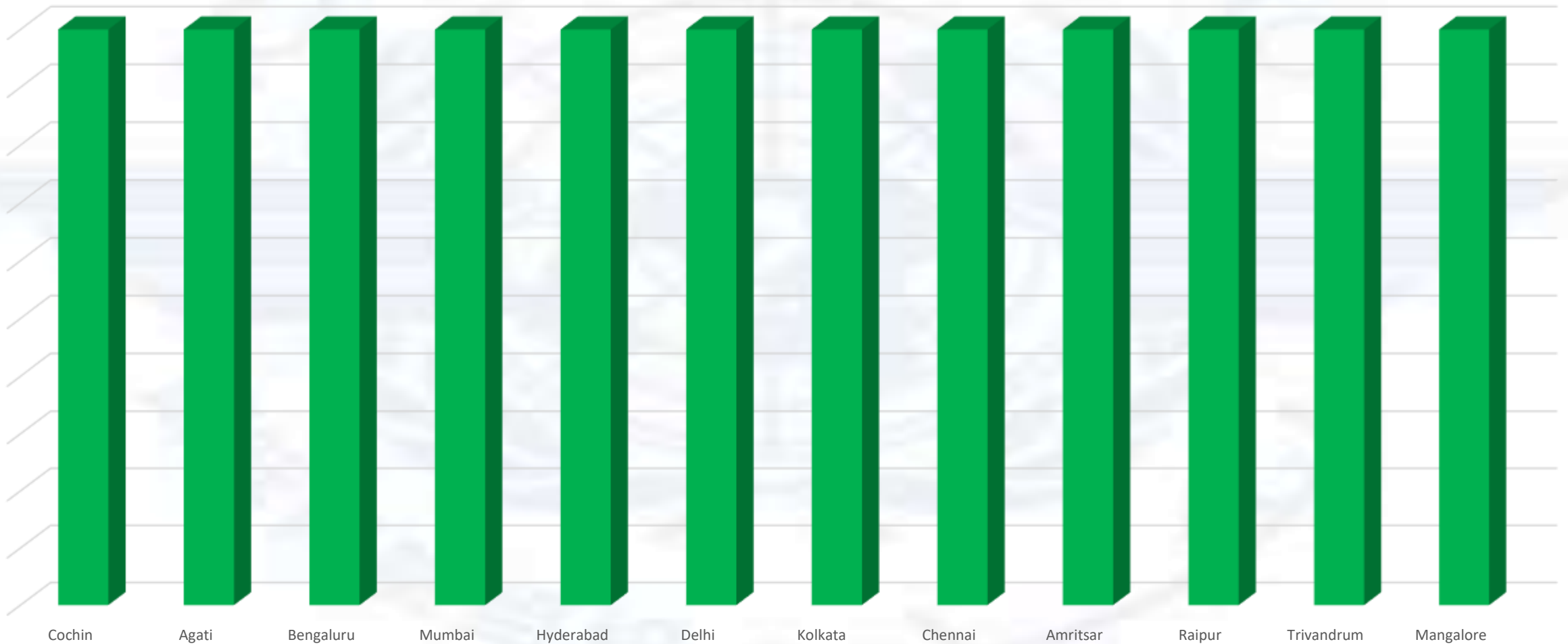
Has the aerodrome operator developed a habitat management programme of the airfield?



Green = Yes ; Red = No

## Response to Question - 15

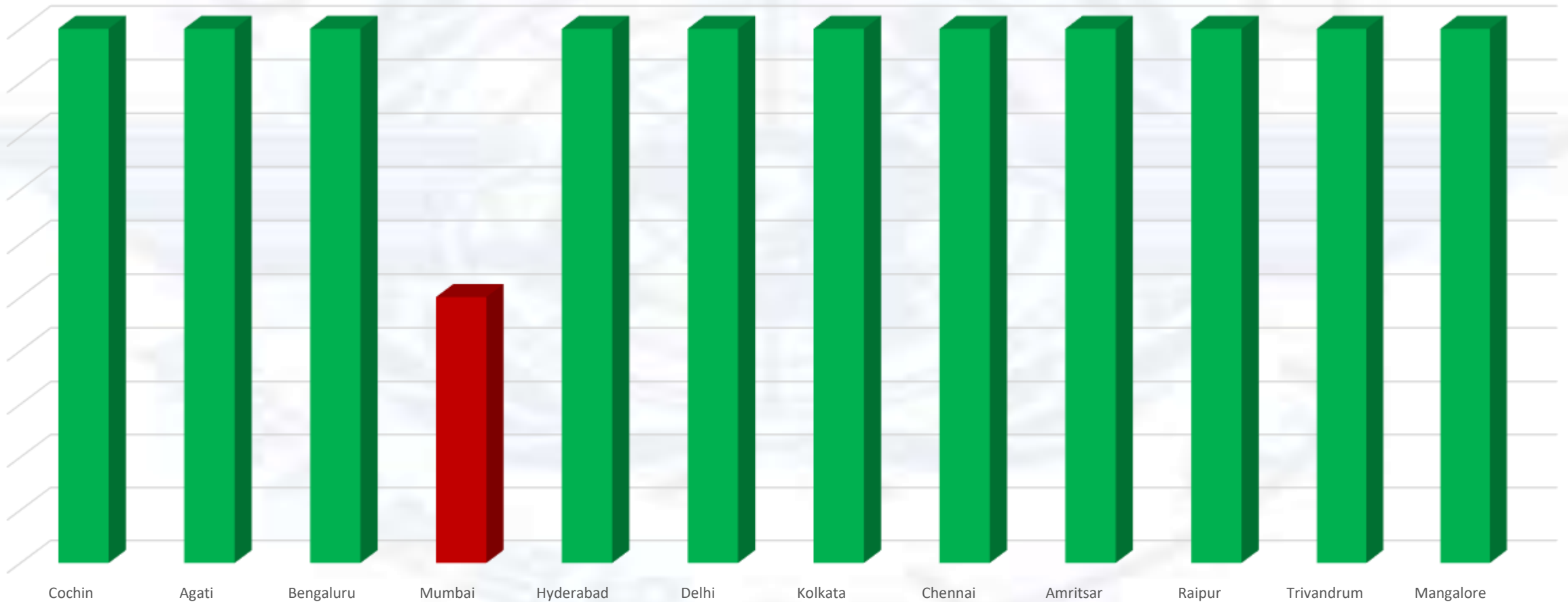
Does the aerodrome operator have or include a process for mitigation measures and their follow-up in the evaluation of the wildlife hazard management programme?



Green = Yes ; Red = No

## Response to Question - 16

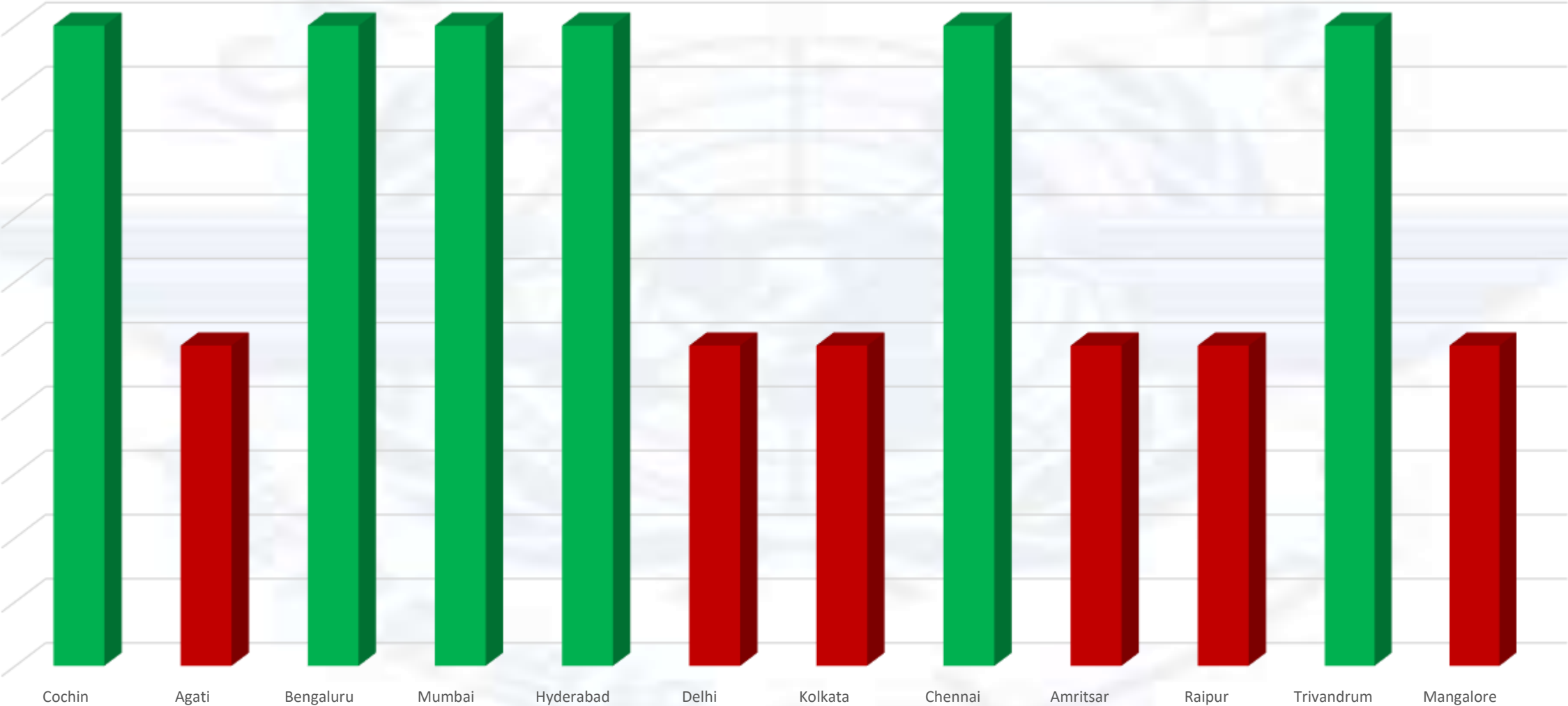
Do land management processes exist in areas surrounding aerodrome to reduce attractiveness of the environment to hazardous wildlife including food (vegetation, agriculture, waste management), water and shelter (open areas, forest



Green = Yes ; Red = No

# Response to Question - 17

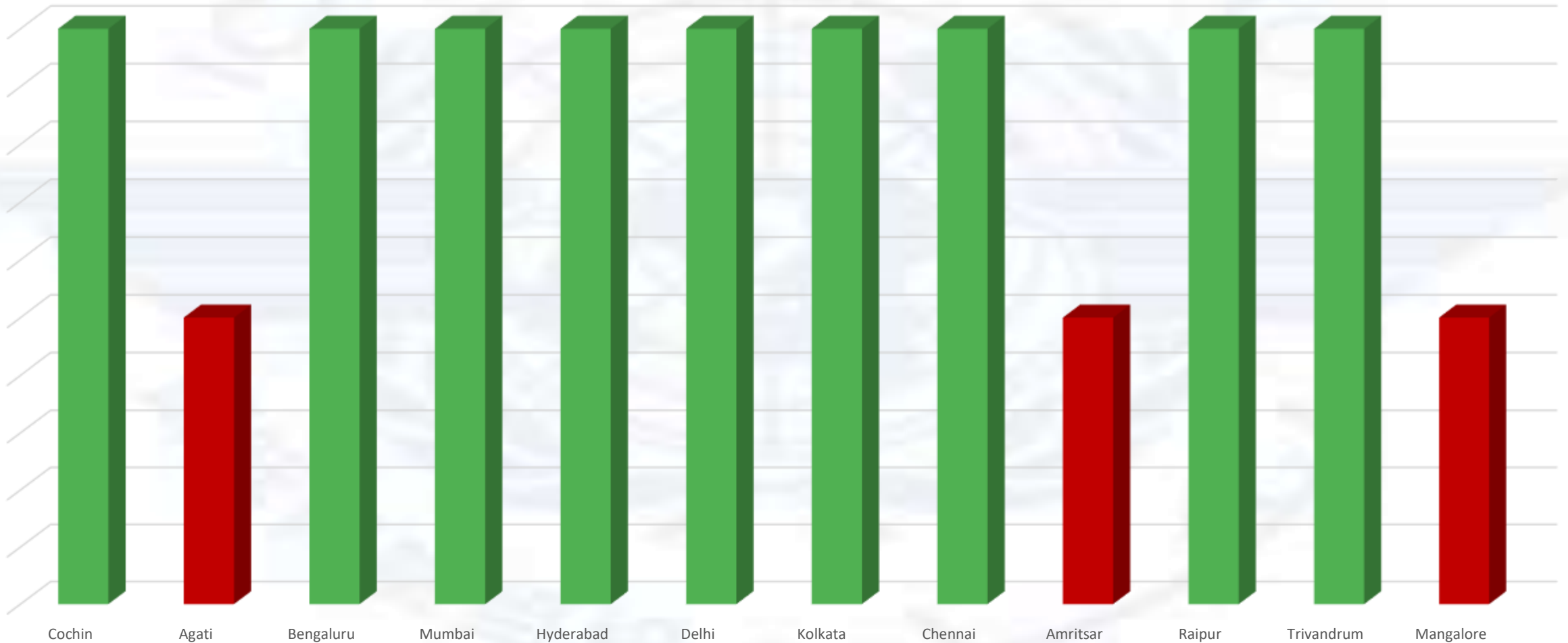
Does the aerodrome operator participate in a national hazard reduction program?



Green = Yes ; Red = No

## Response to Question - 18

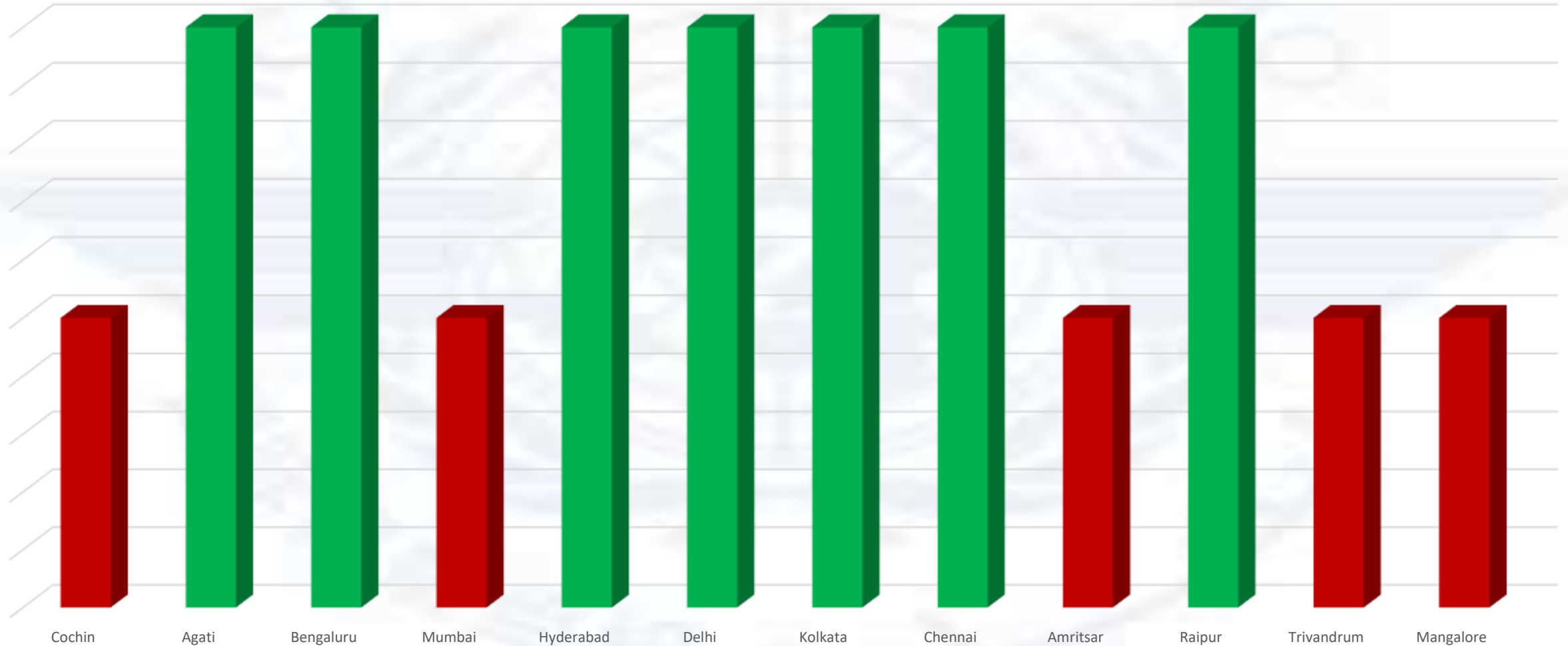
Has any wildlife assessment survey of airport been conducted with the help of external agencies and ornithologists?



Green = Yes ; Red = No

## Response to Question - 19

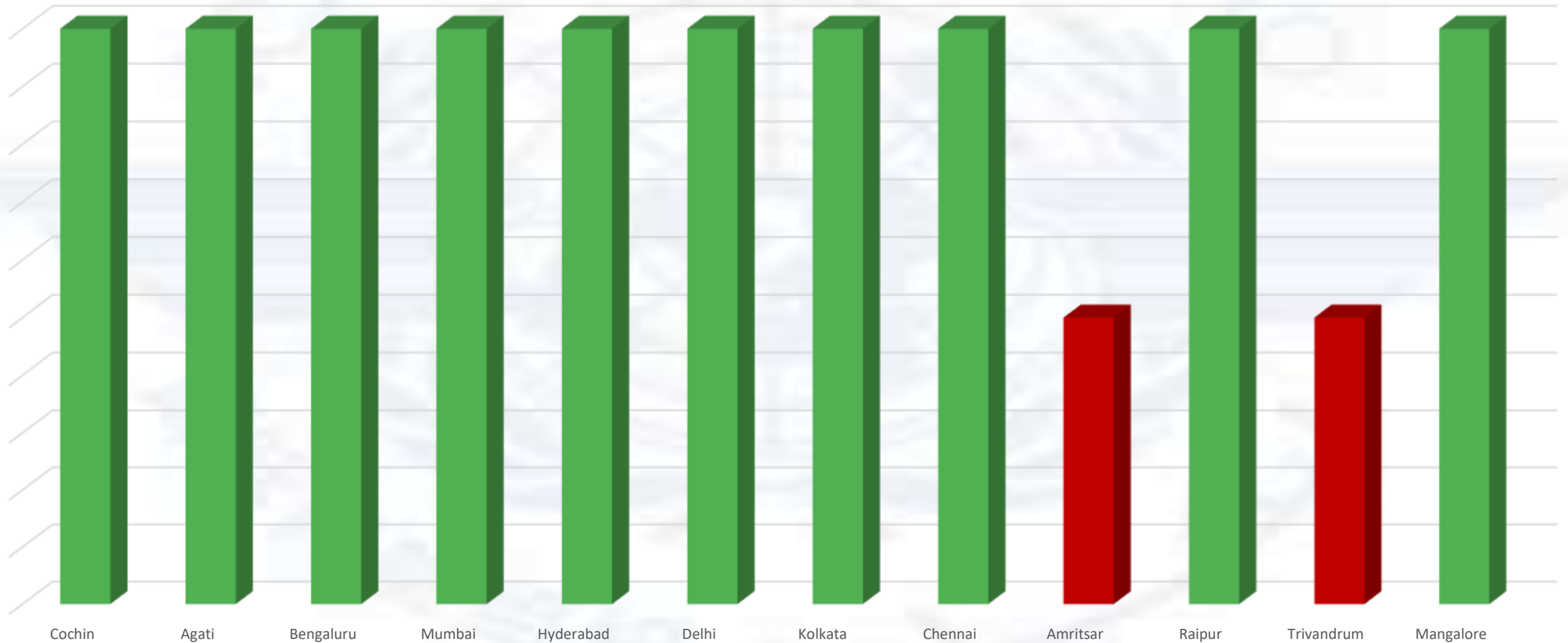
Does the aerodrome operator use particular zoning of aerodrome surroundings in WHM Program?



Green = Yes ; Red = No

## Response to Question - 20

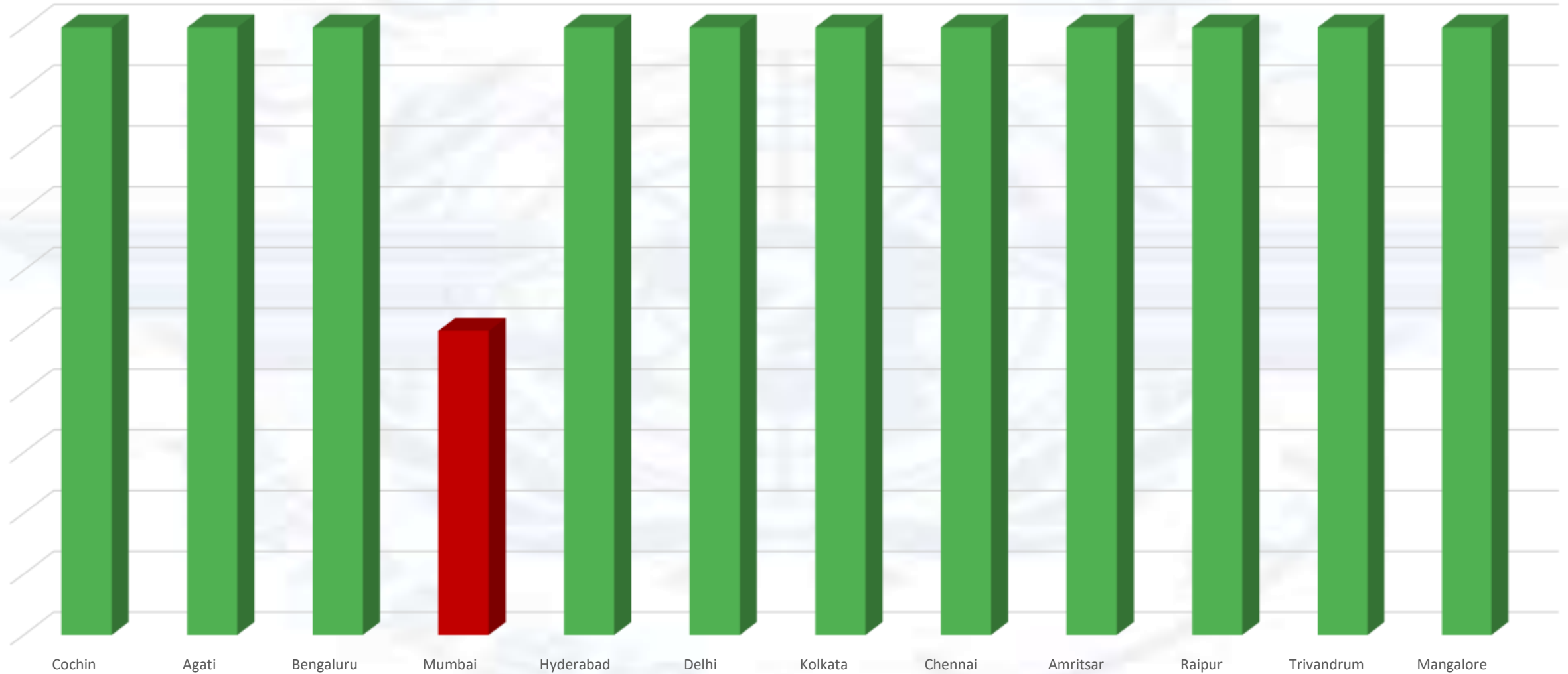
Does the aerodrome operator demonstrate a safety risk-based approach for wildlife hazard management?



Green = Yes ; Red = No

## Response to Question - 21

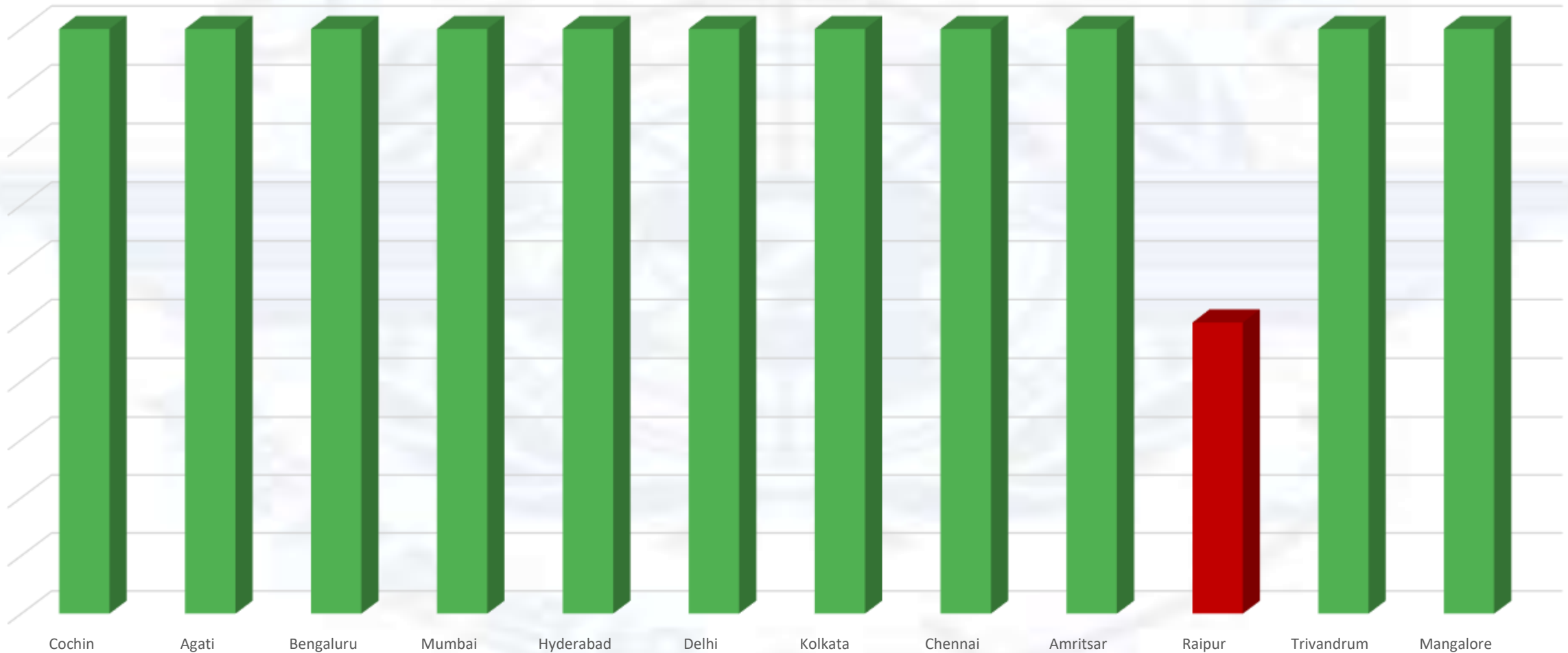
Does aerodrome operator record environmental issues affecting wildlife strike hazards?



Green = Yes ; Red = No

## Response to Question - 22

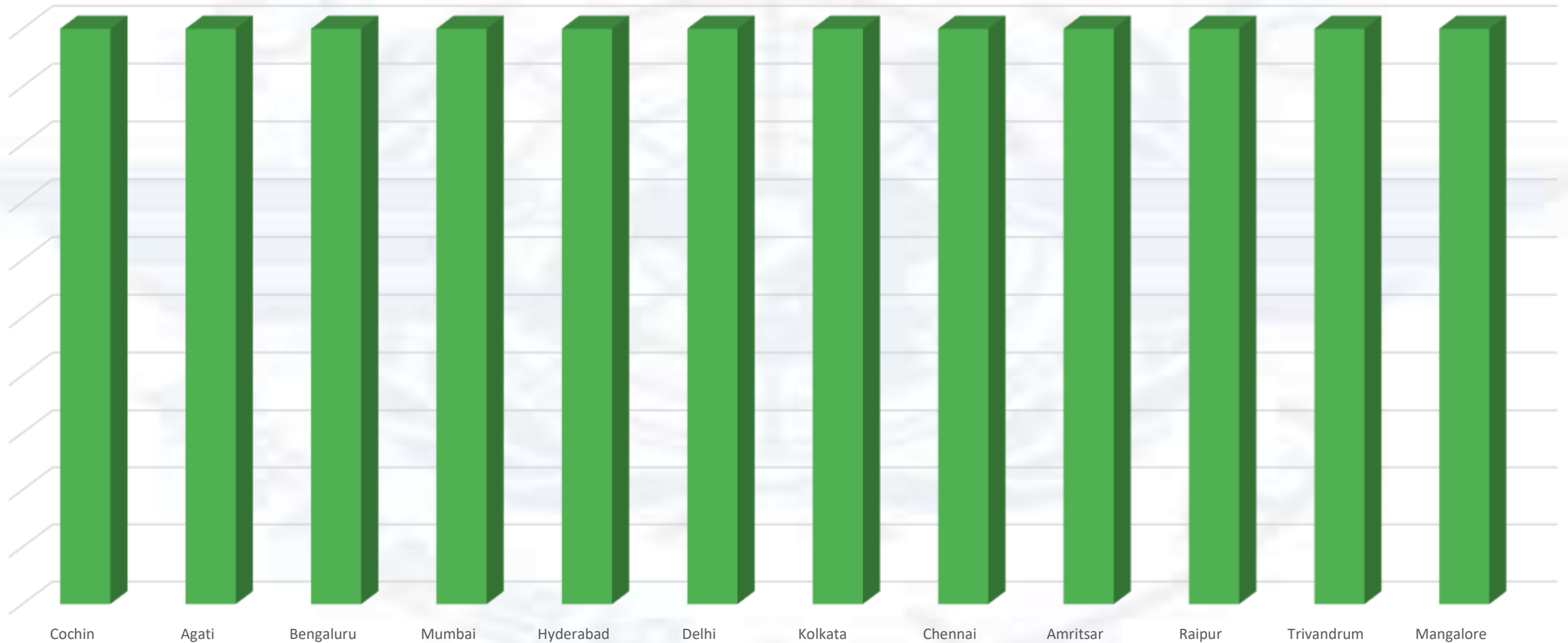
Has the aerodrome operator employed competent manpower for wildlife management at the airport?



Green = Yes ; Red = No

## Response to Question - 23

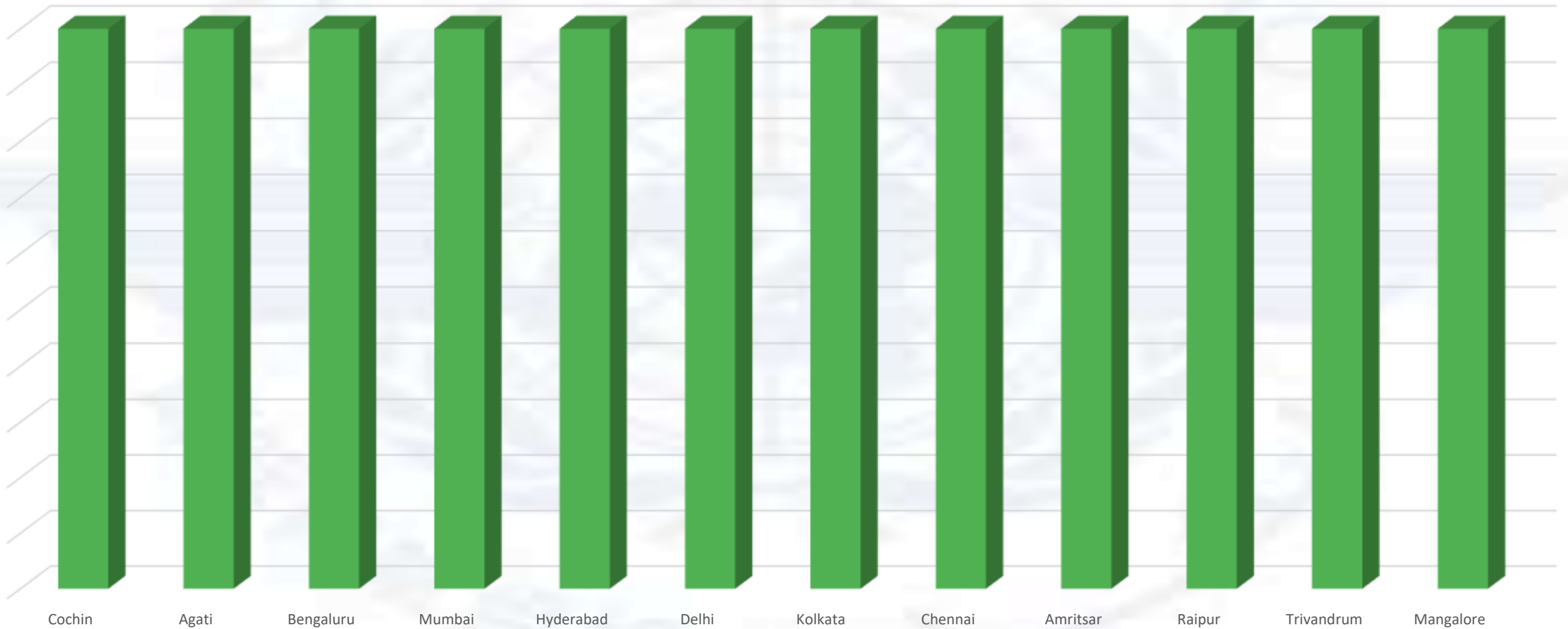
Has an airfield environment management committee been established at the aerodrome and are meetings conducted regularly?



Green = Yes ; Red = No

## Response to Question - 24

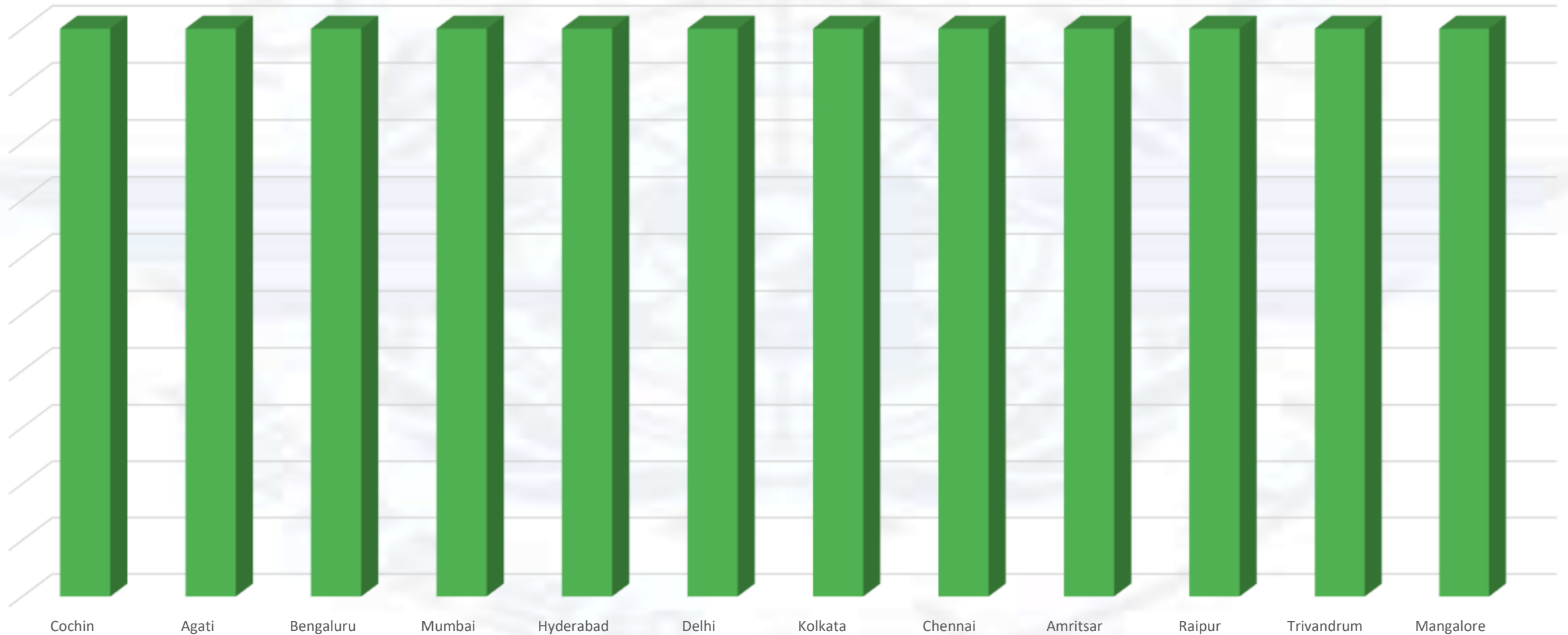
Does the wildlife management program specify how often an aerodrome operator should inspect in and around the aerodrome to identify the sources of wildlife/bird attraction?



Green = Yes ; Red = No

## Response to Question - 25

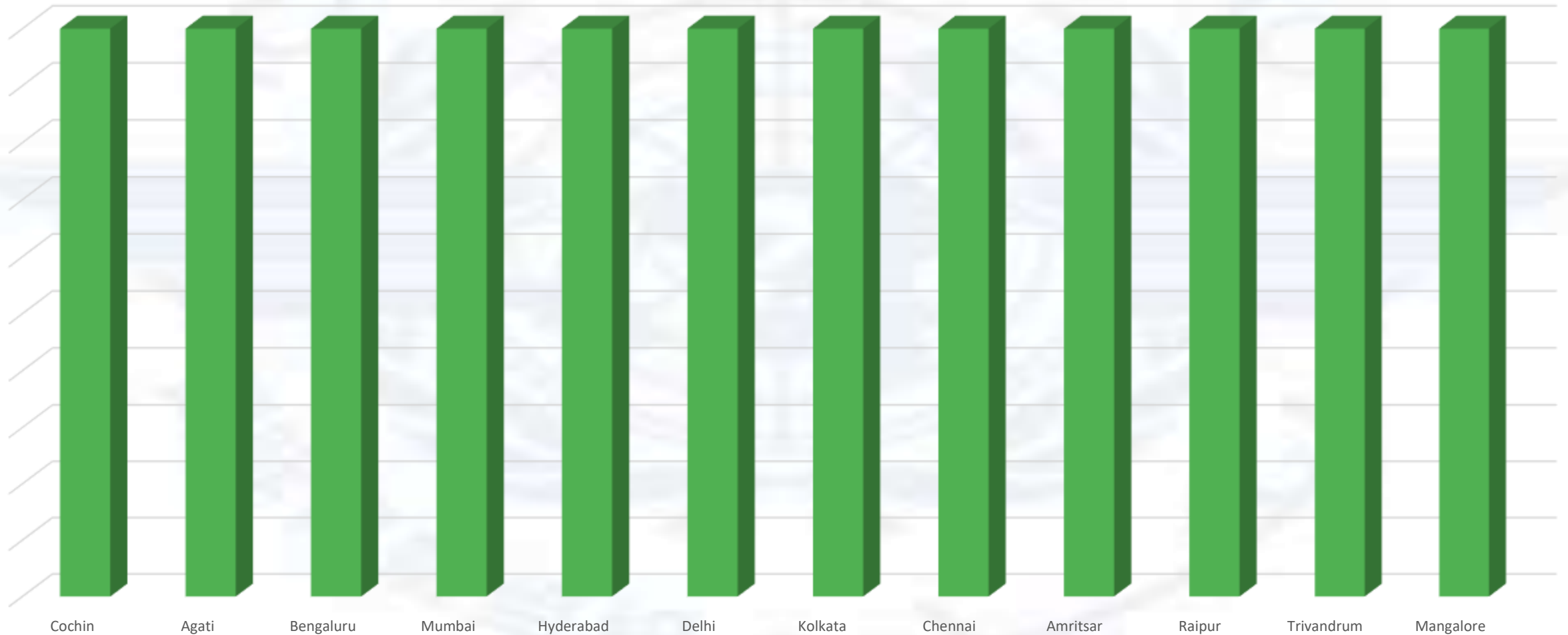
Does the wildlife management program specify how often an aerodrome operator should inspect in and around the aerodrome to identify the sources of wildlife/bird attraction?



Green = Yes ; Red = No

## Response to Question - 26

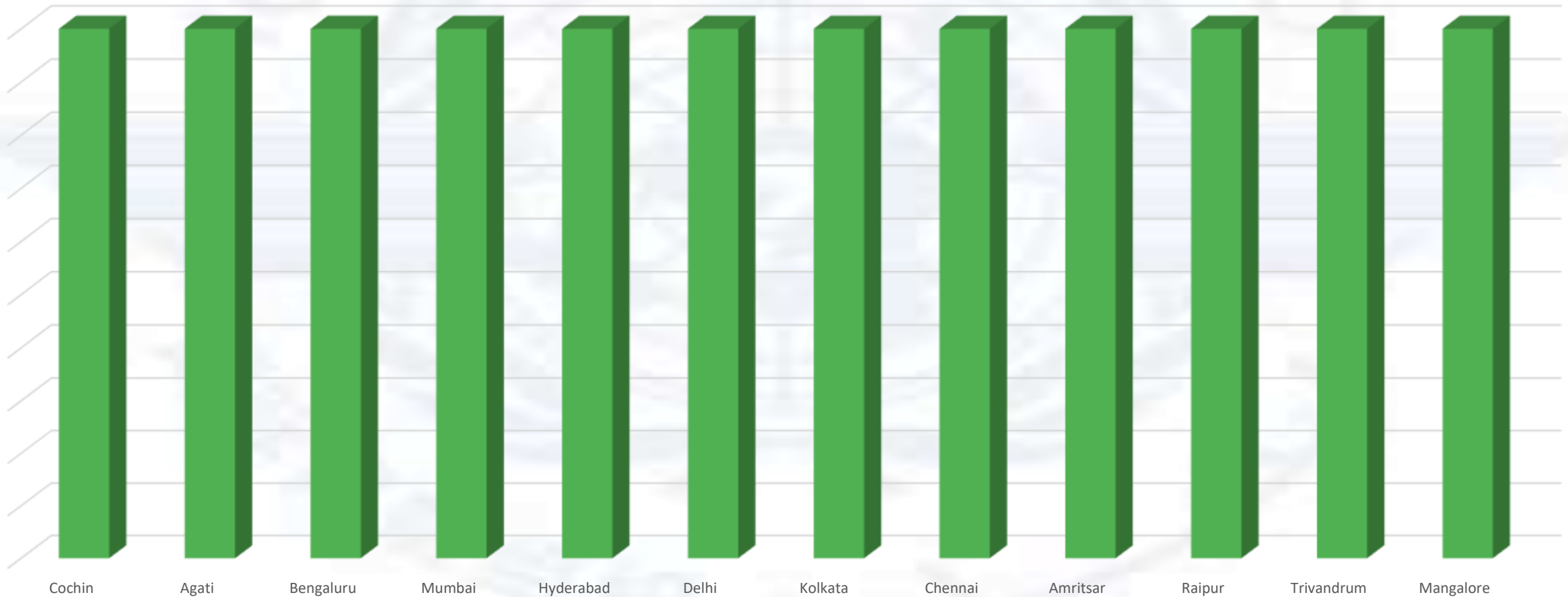
Is inspection being carried out to monitor illegal slaughtering within the ten kilometer radius of the aerodrome?



Green = Yes ; Red = No

## Response to Question - 27

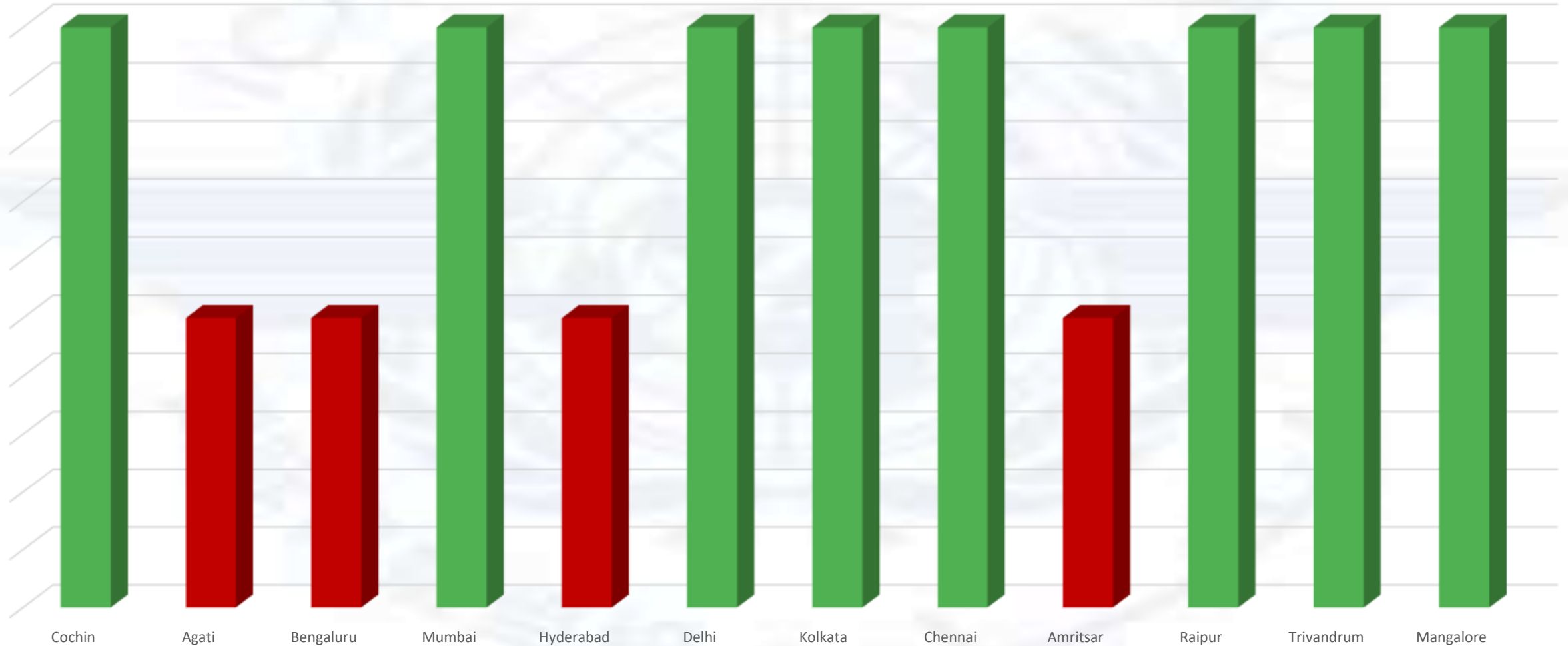
Is there a process for liaison with government agencies and quazi government agencies to ensure the aerodrome is aware of development's that may contribute to creating additional wildlife hazards? For e.g. wildlife sanctuaries etc



Green = Yes ; Red = No

## Response to Question - 28

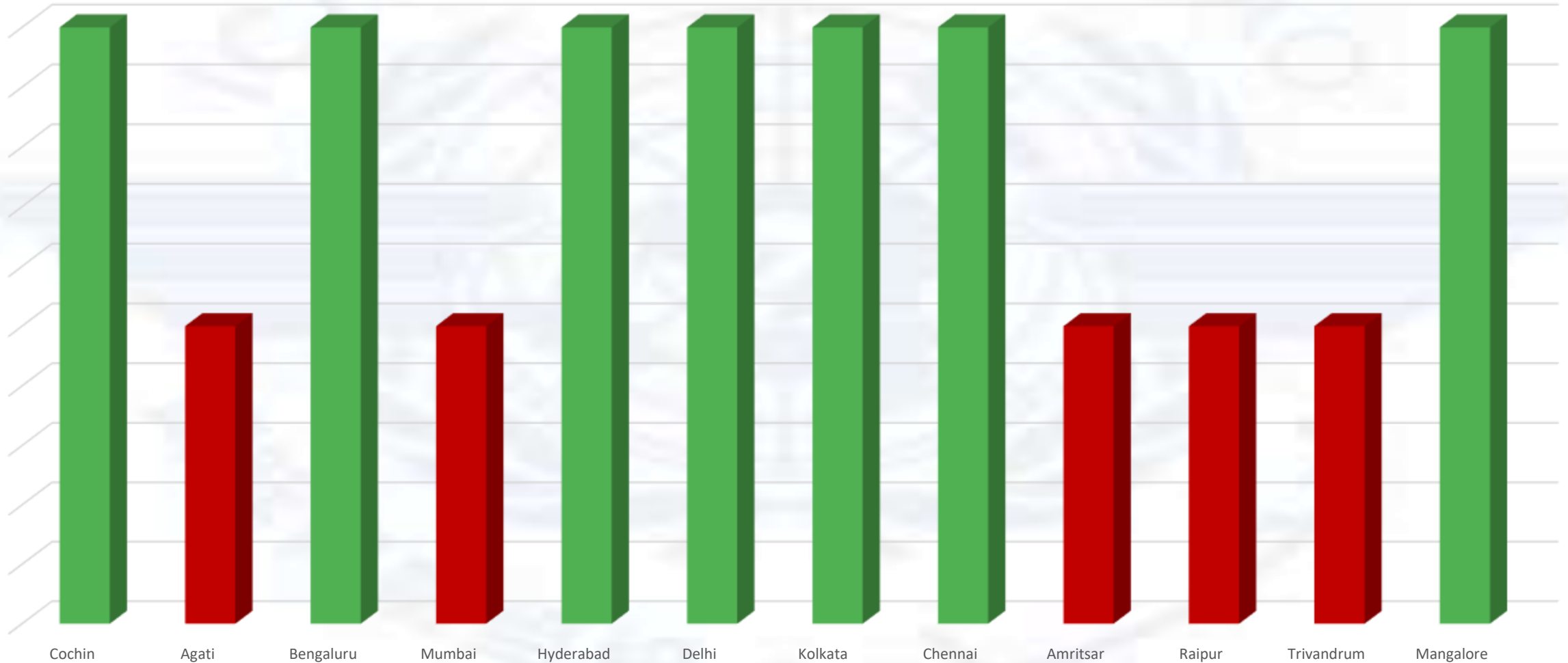
Does the aerodrome operator submit annual report on Wildlife hazard management to CAA/DGCA?



Green = Yes ; Red = No

## Response to Question - 29

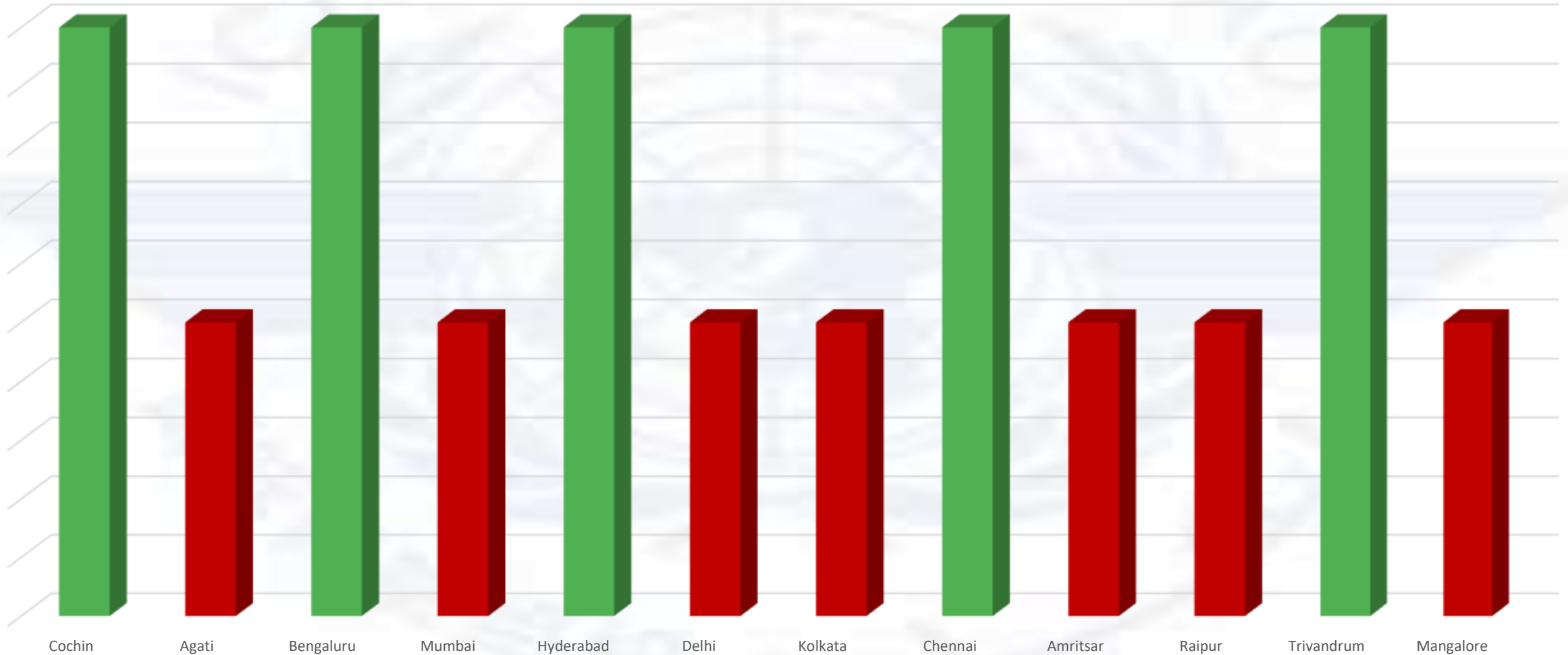
Has the aerodrome operator documented safety risk assessment processes using strike data for each species?



Green = Yes ; Red = No

## Response to Question - 30

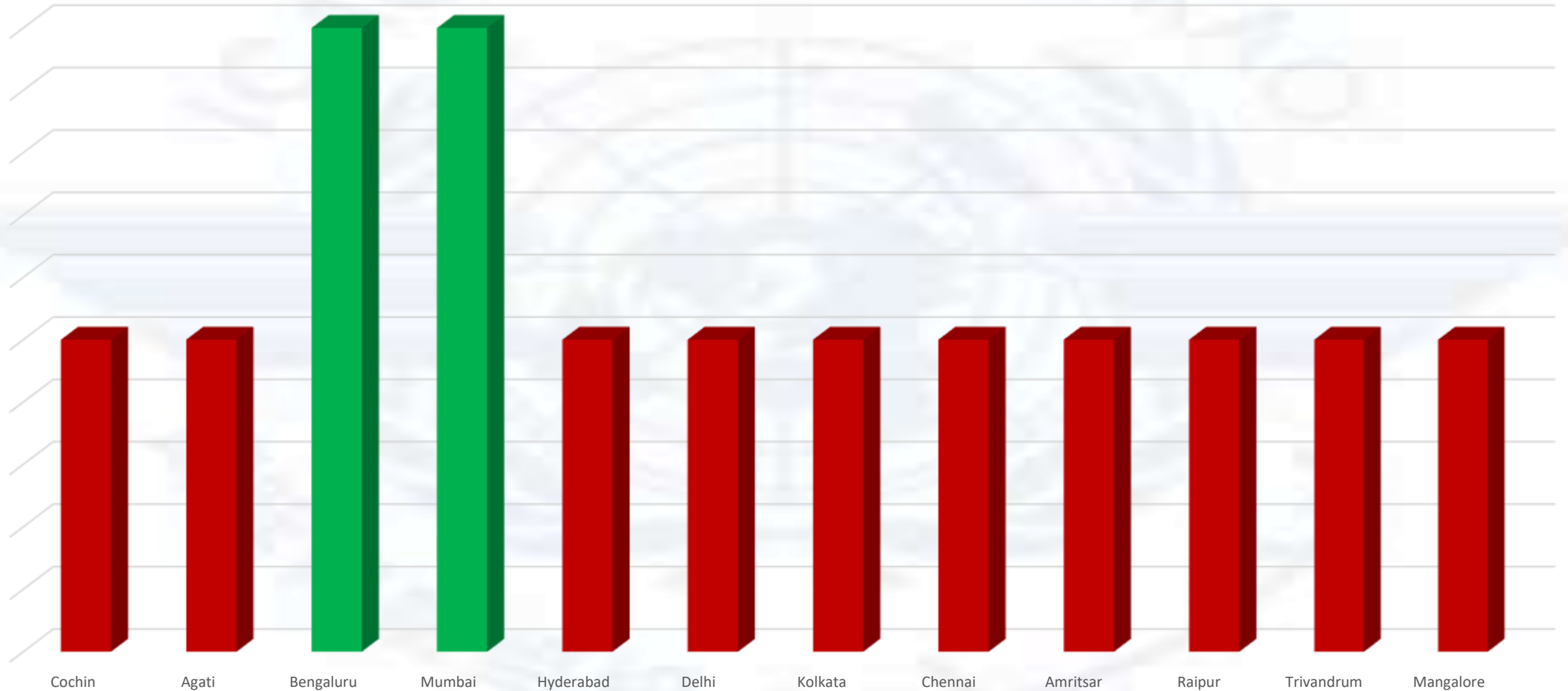
Does the aerodrome operator provide information on the presence of species, number of individuals and their biology?



Green = Yes ; Red = No

## Response to Question - 31

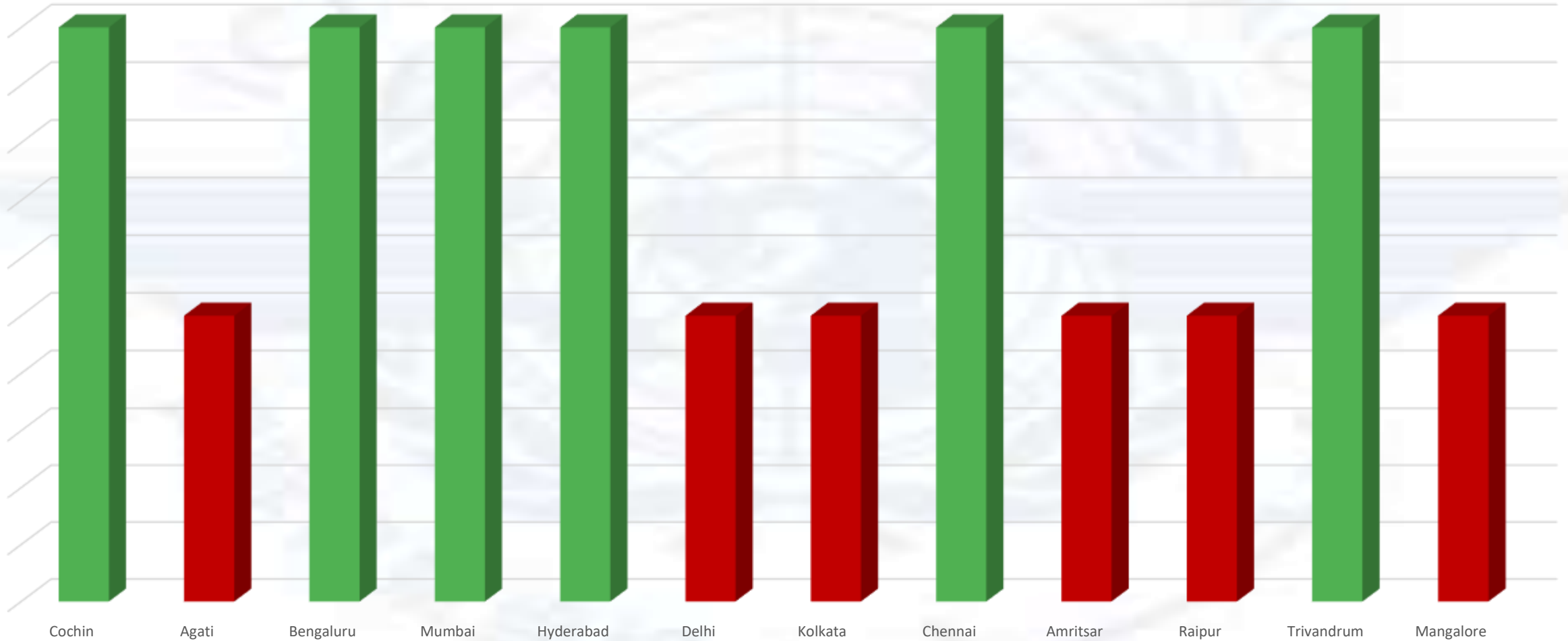
Does the aerodrome operator use a DNA based species identification procedure?



Green = Yes ; Red = No

## Response to Question - 32

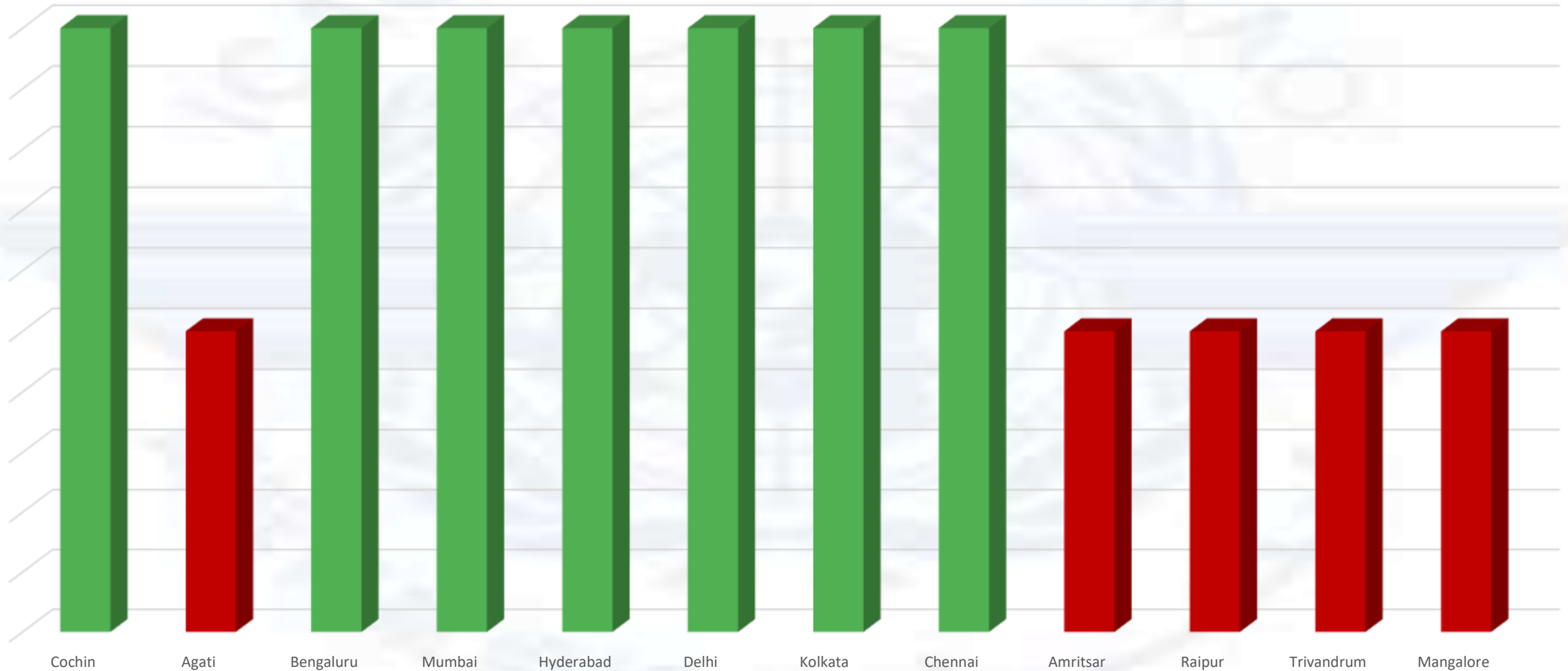
Does the aerodrome operator conduct species identification procedures by trained personnel to include feathers, animal remains, DNA analysis, etc.



Green = Yes ; Red = No

## Response to Question - 33

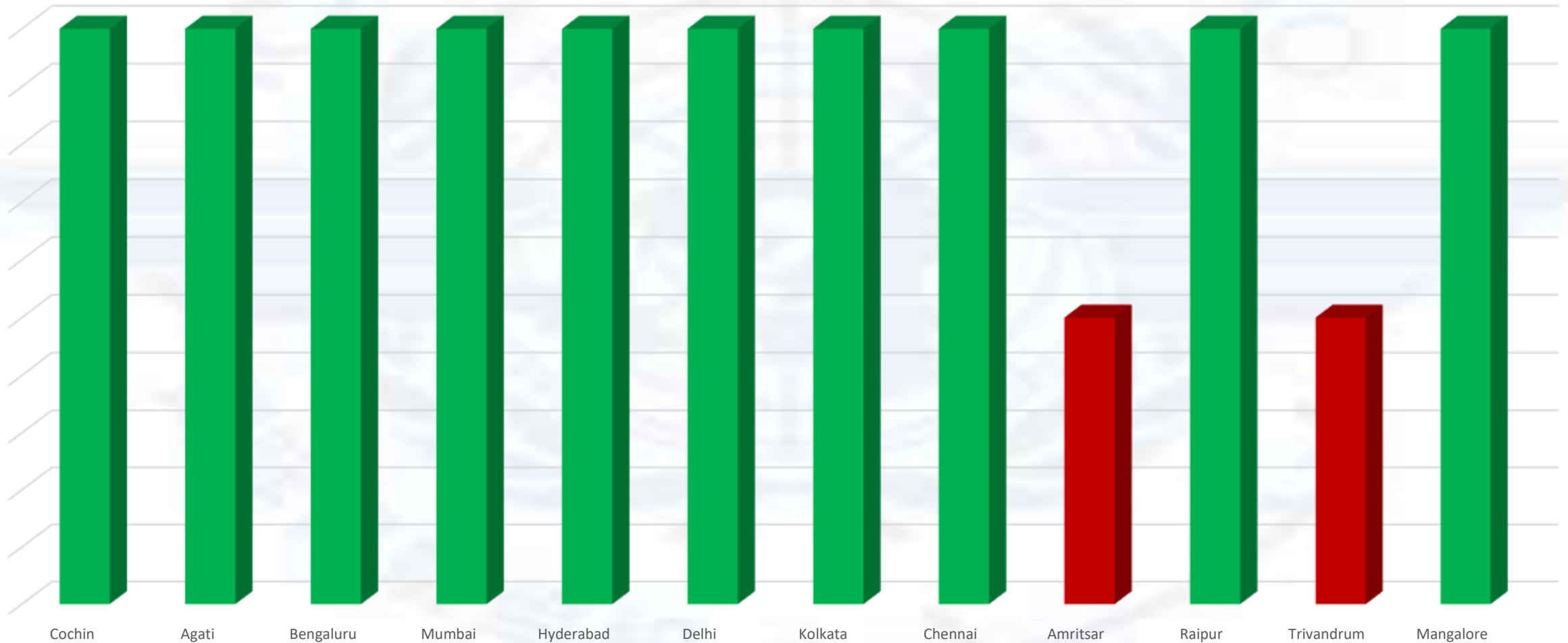
Does the aerodrome operator use any other species identification procedures?



Green = Yes ; Red = No

## Response to Question - 34

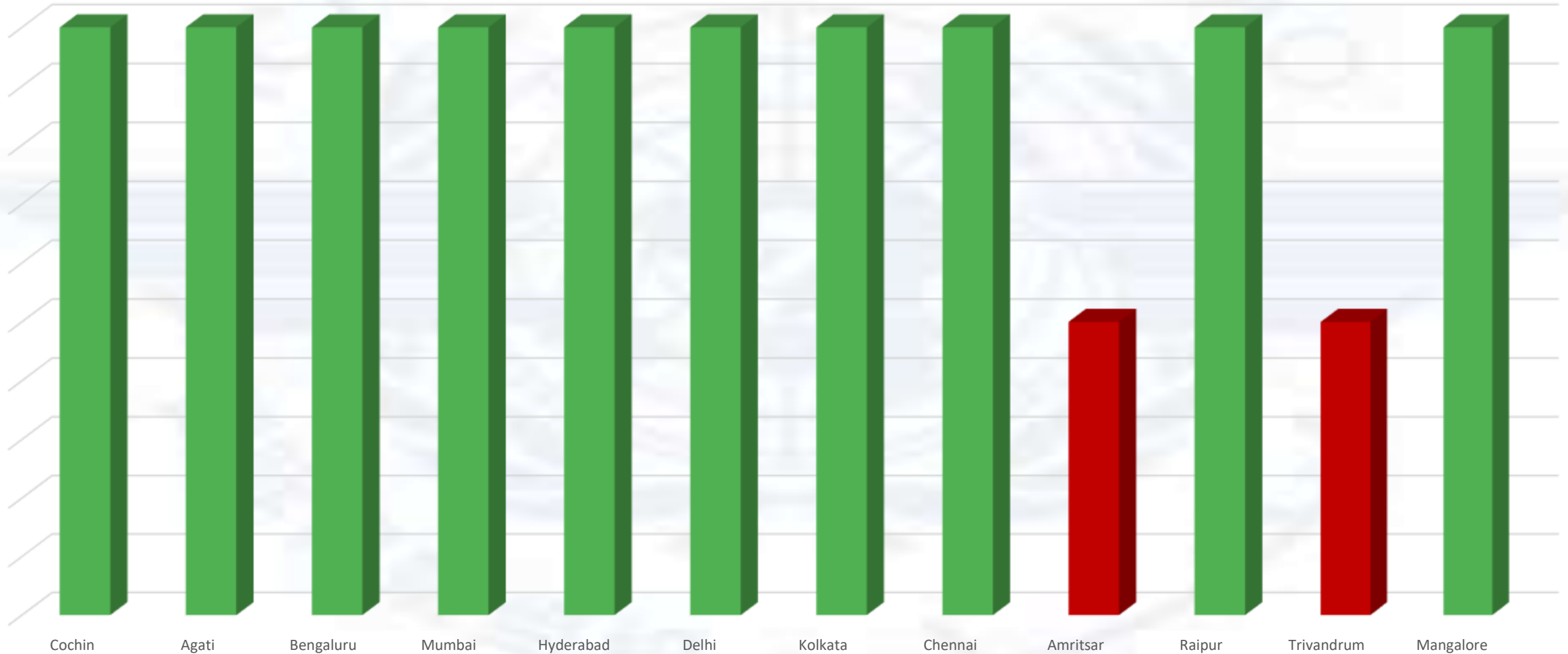
Does the aerodrome operator have wildlife management related Safety management systems (SMS) in place?



Green = Yes ; Red = No

## Response to Question - 35

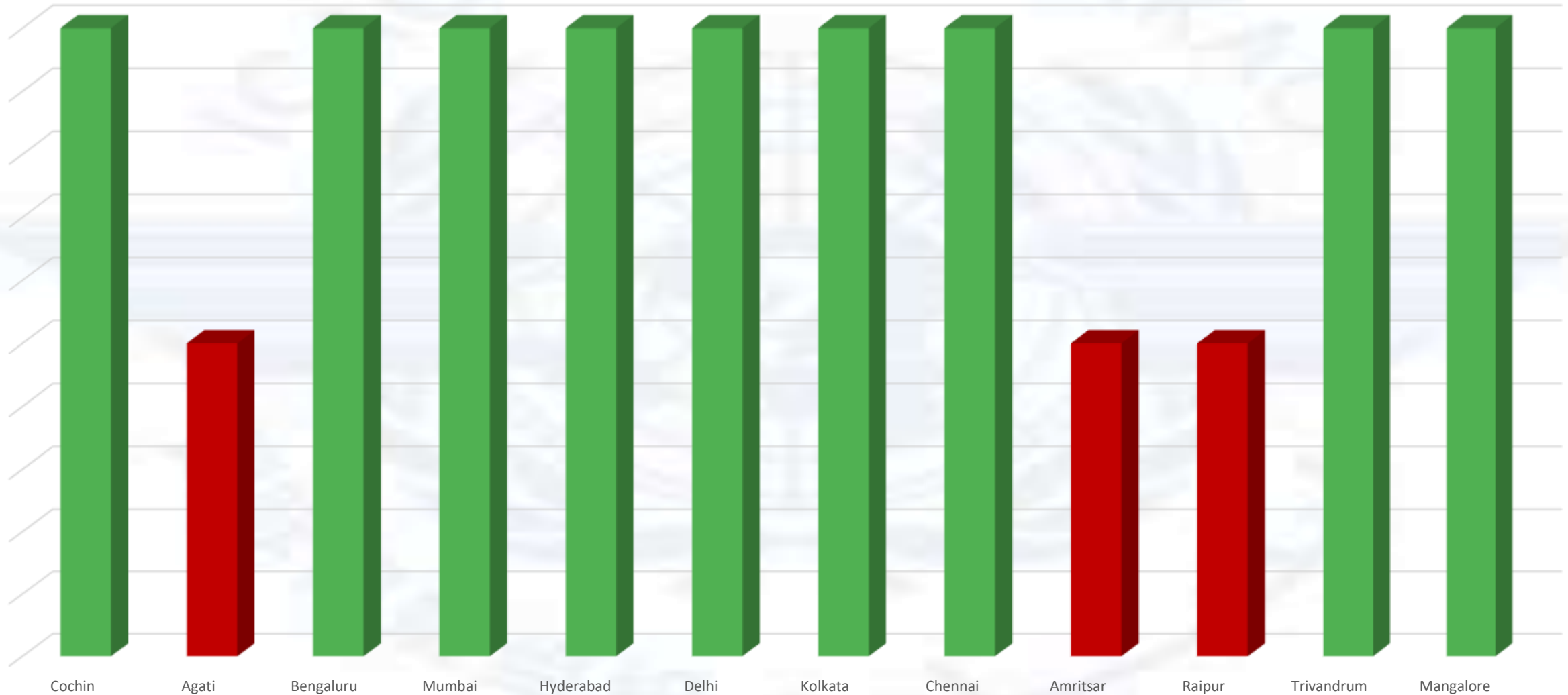
Does the aerodrome operator have target action plans/strategy to reduce those species which cause greatest hazard on the airfield?



Green = Yes ; Red = No

## Response to Question - 36

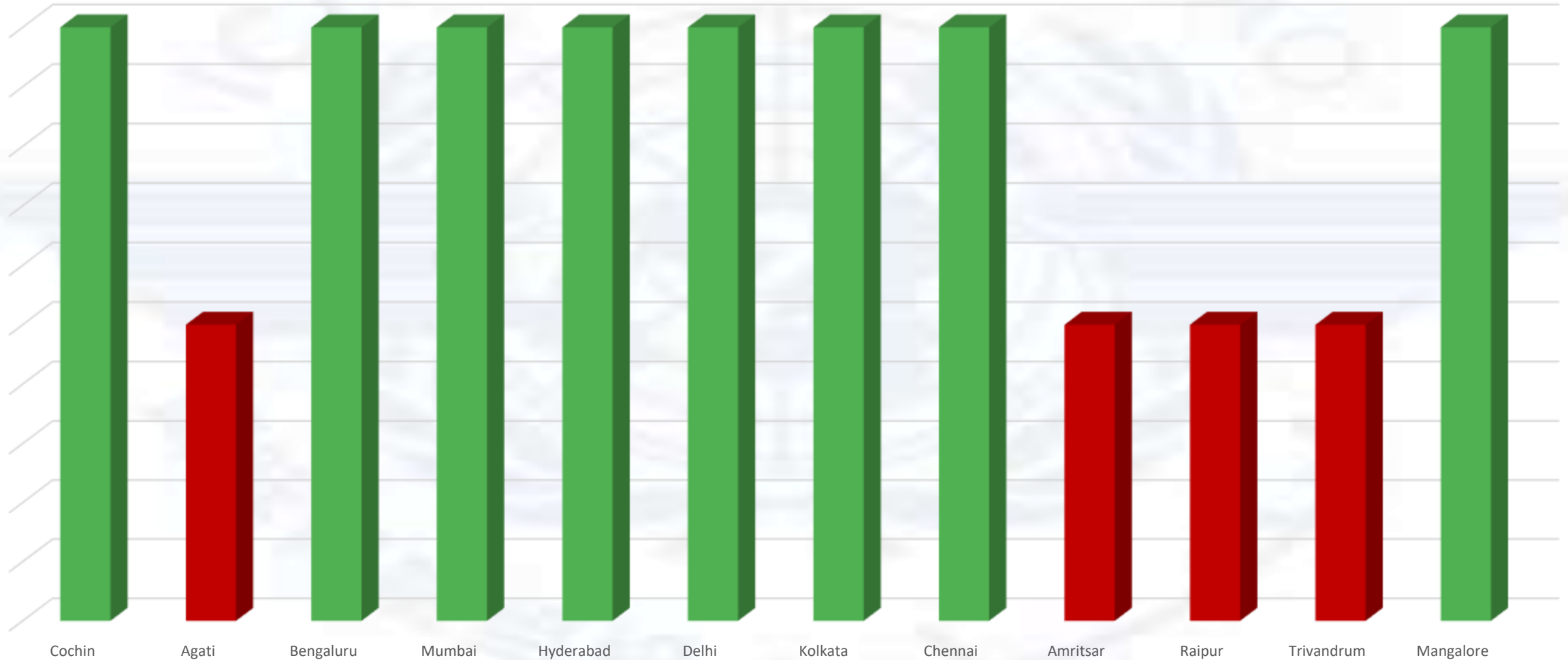
Are wildlife strike hazard assessments being carried out by specialists?



Green = Yes ; Red = No

## Response to Question - 37

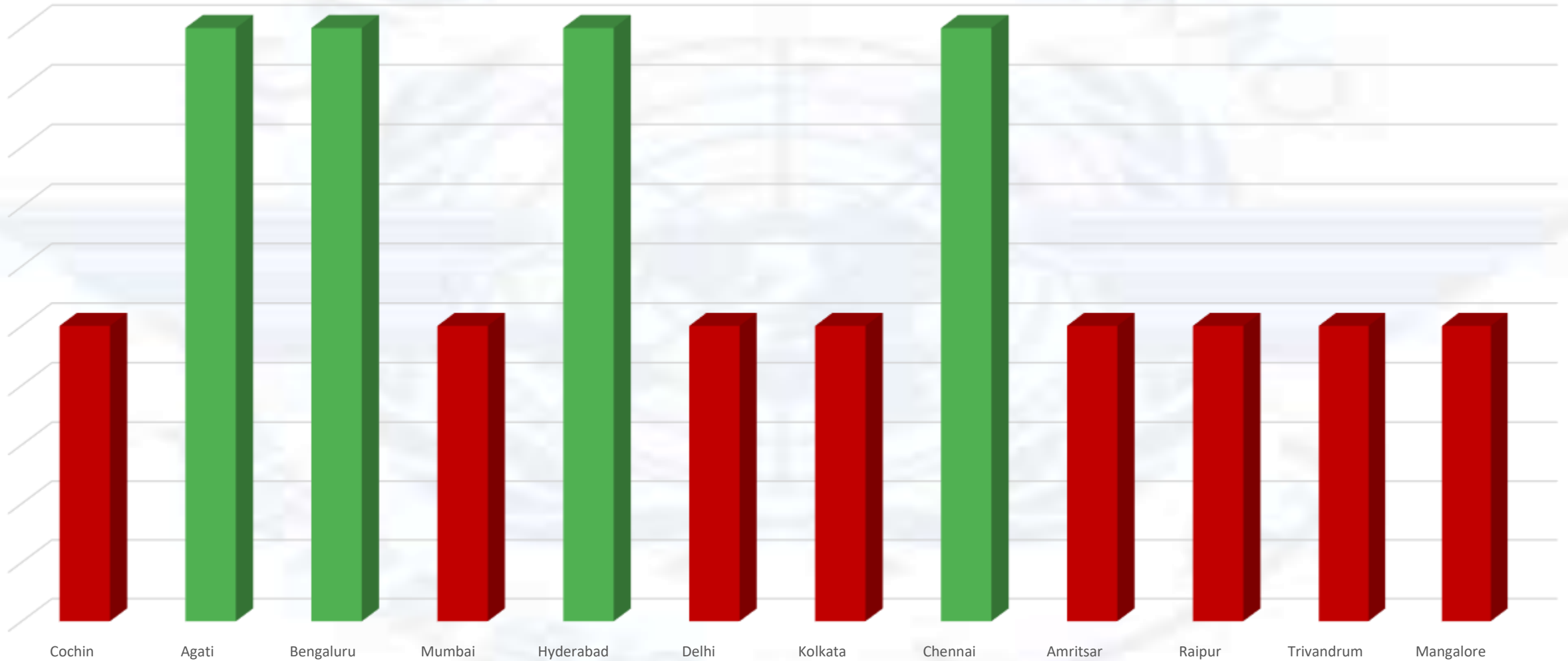
Does the aerodrome operator manage wildlife strike hazards in accordance with safety risk assessments conducted by a relevant expert?



Green = Yes ; Red = No

## Response to Question - 38

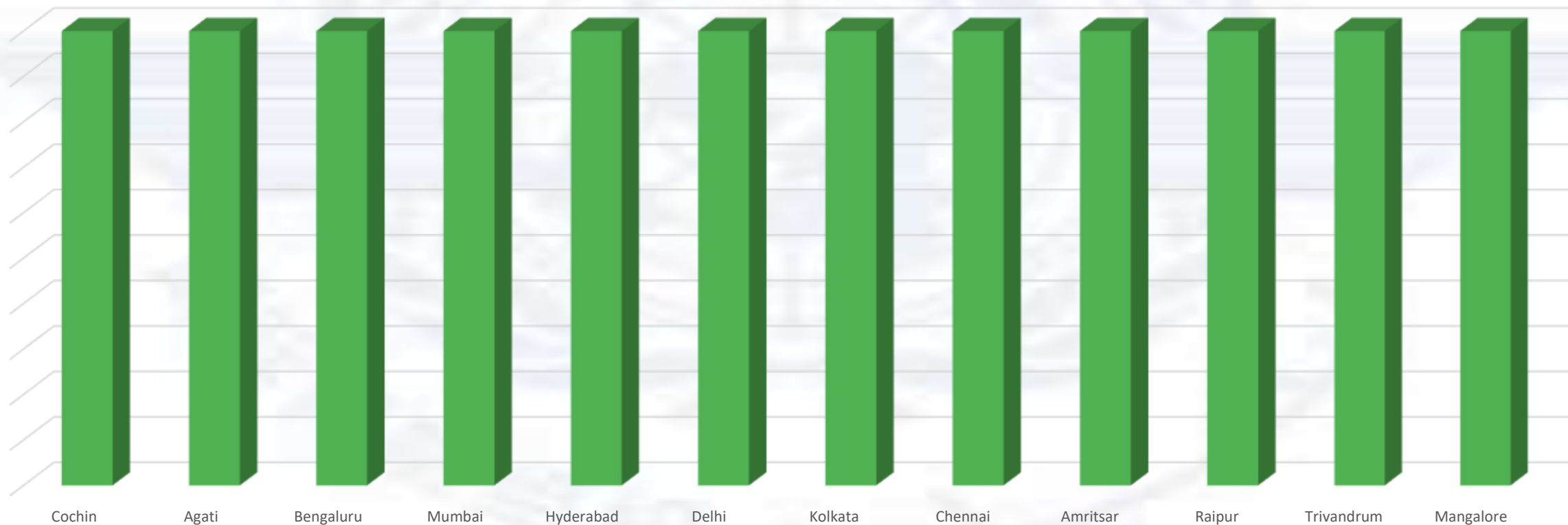
Has an assessment of wildlife strike hazard outside the aerodrome been undertaken?



Green = Yes ; Red = No

## Response to Question - 39

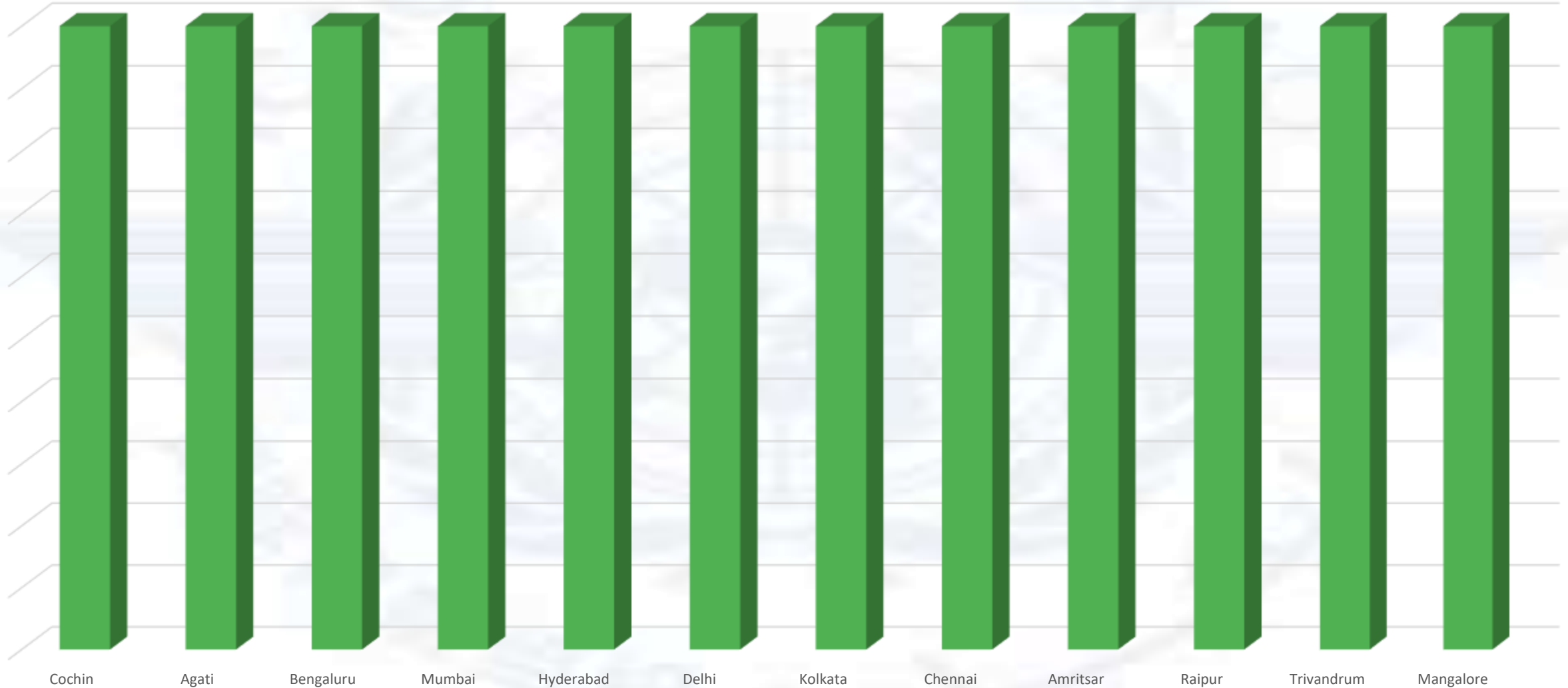
Does the aerodrome operator have a procedure in place to identify source of wildlife attractants in the vicinity of aerodrome such as slaughter houses, Slum clusters, garbage dump, illegal abattoirs, unauthorized piggeries, dairy



Green = Yes ; Red = No

# Response to Question - 40

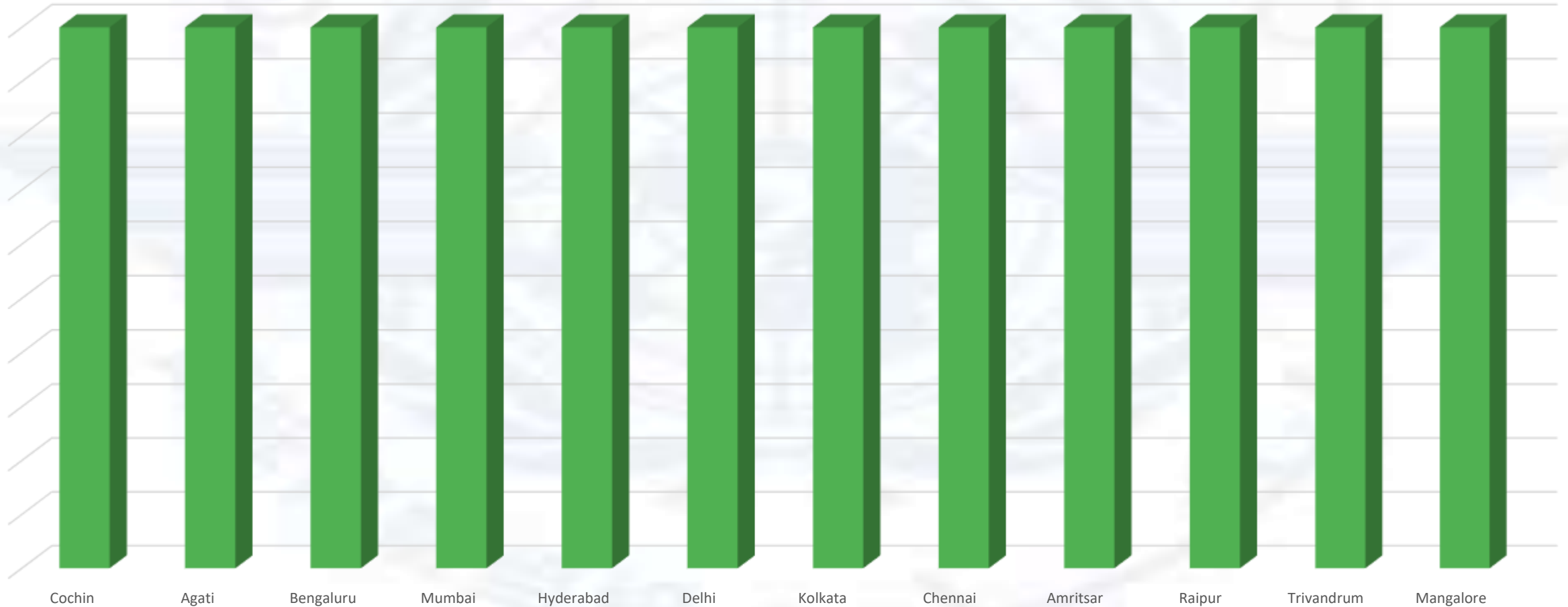
Does the aerodrome have a suitable fence to prevent hazardous wildlife incursion?



Green = Yes ; Red = No

## Response to Question - 41

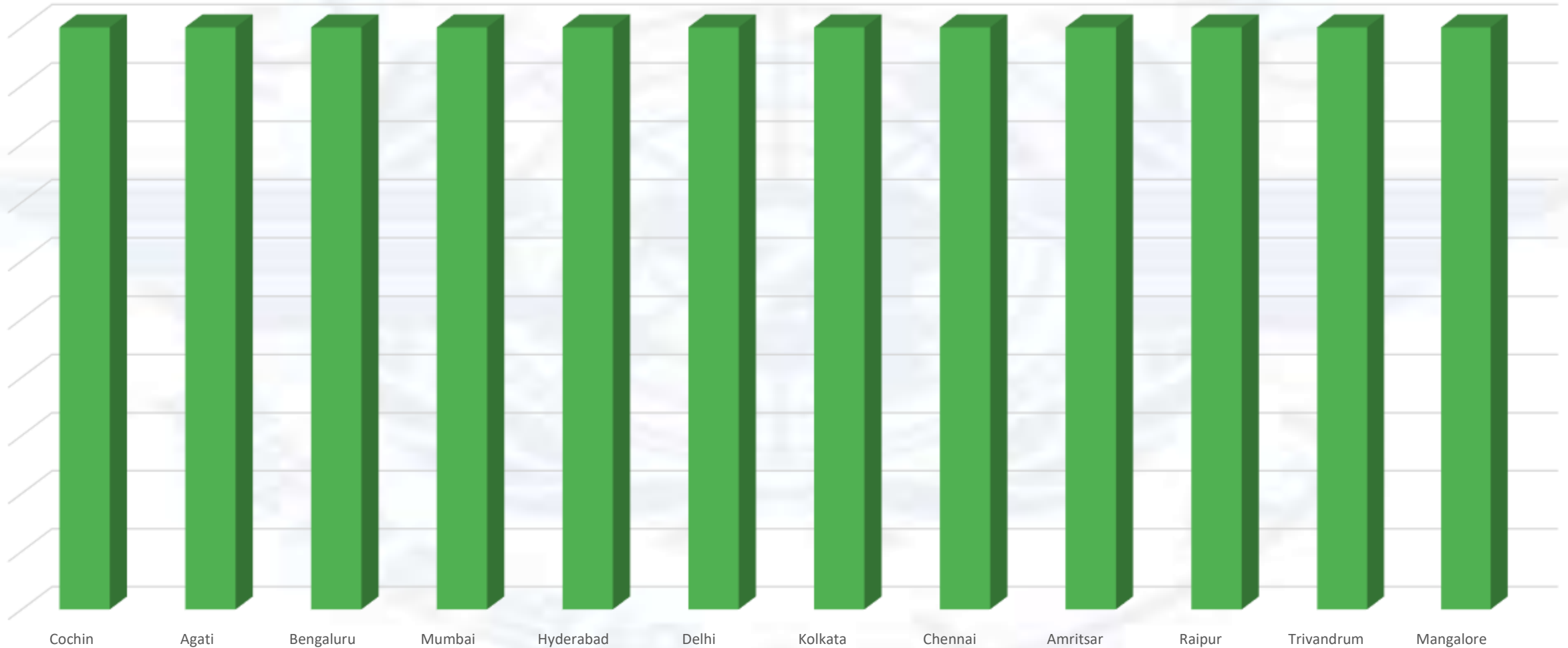
Is there a proper waste management disposal system in place for food remains inside the aerodrome and a system to avoid waste dumping in an uncovered bin in vicinity of aerodrome?



Green = Yes ; Red = No

## Response to Question - 42

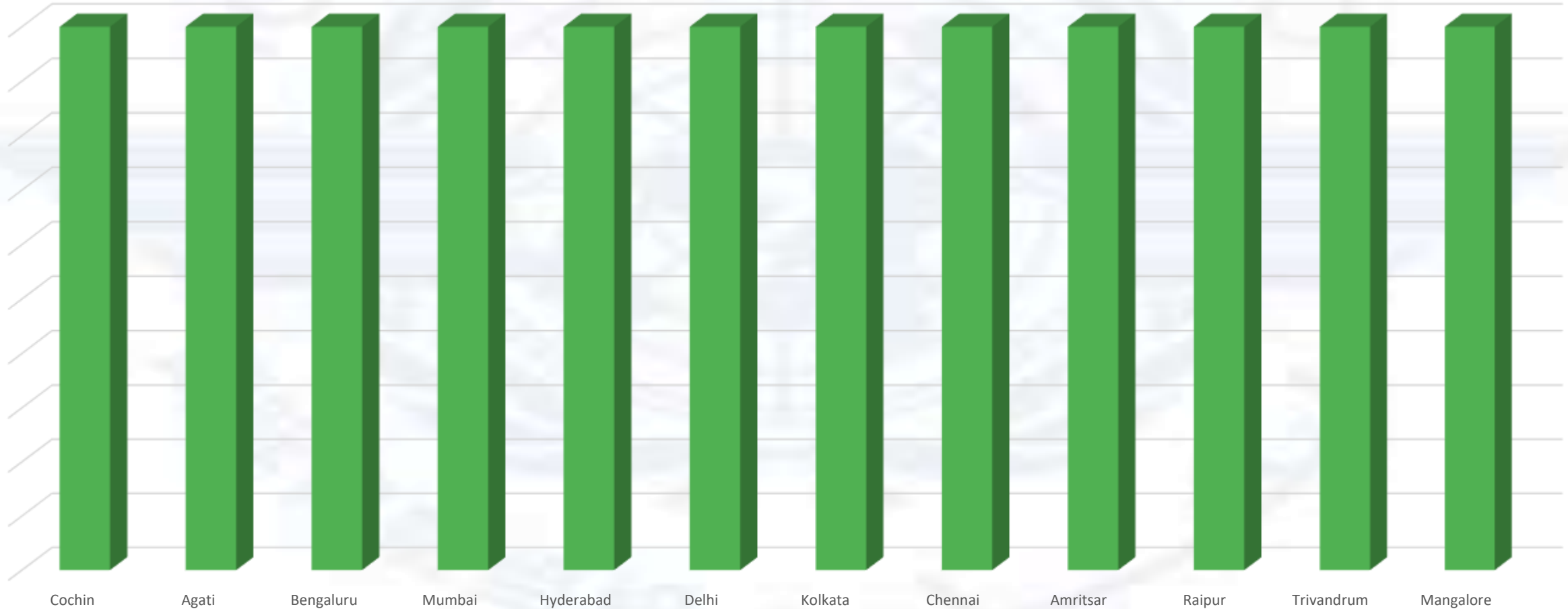
Are ecological measures implemented to limit or reduce wildlife attractiveness at the airport and in the vicinity?



Green = Yes ; Red = No

## Response to Question - 43

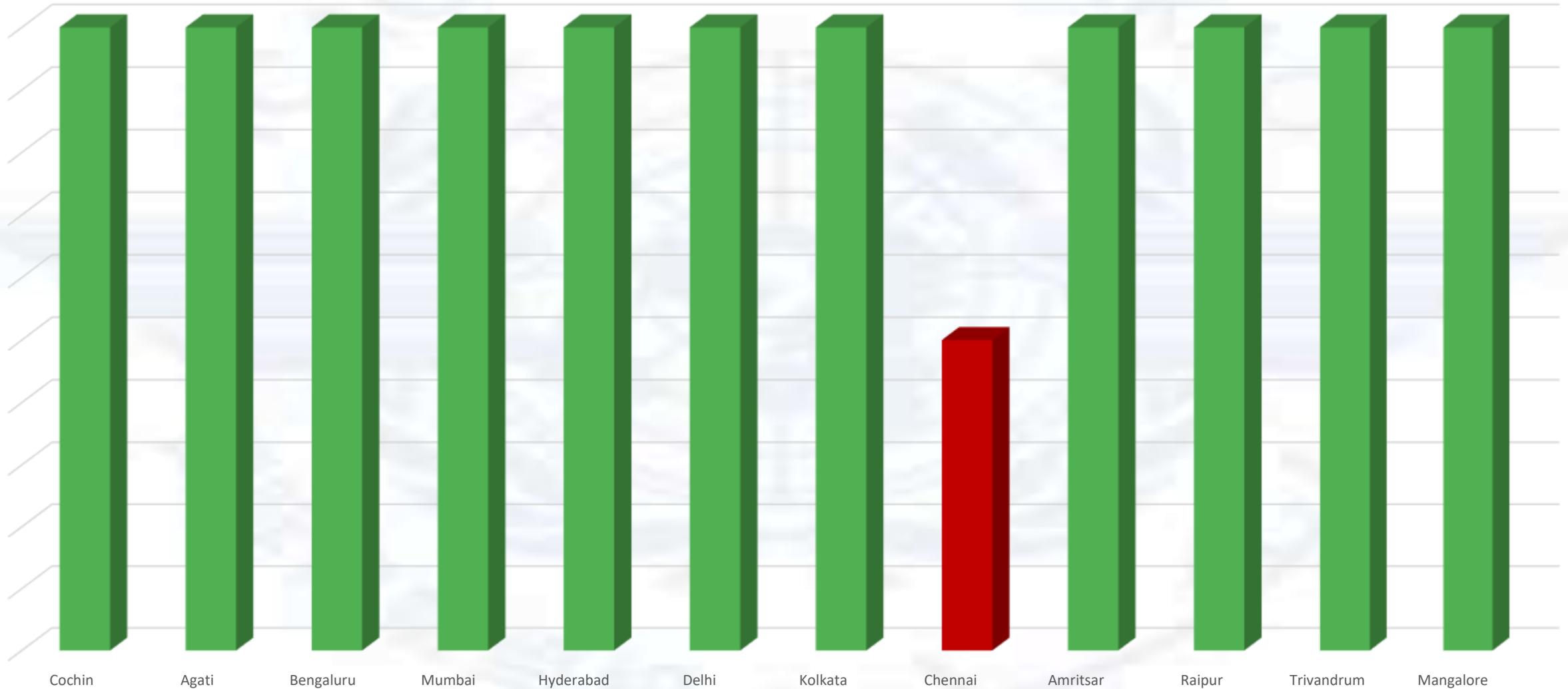
Are various repellent methods used at the aerodrome for wildlife strike prevention - like, Drums, battery operated scare crow, pyrotechnics, crackers, gas guns, shotguns, electronically generated alarm and distress calls playback



Green = Yes ; Red = No

## Response to Question - 44

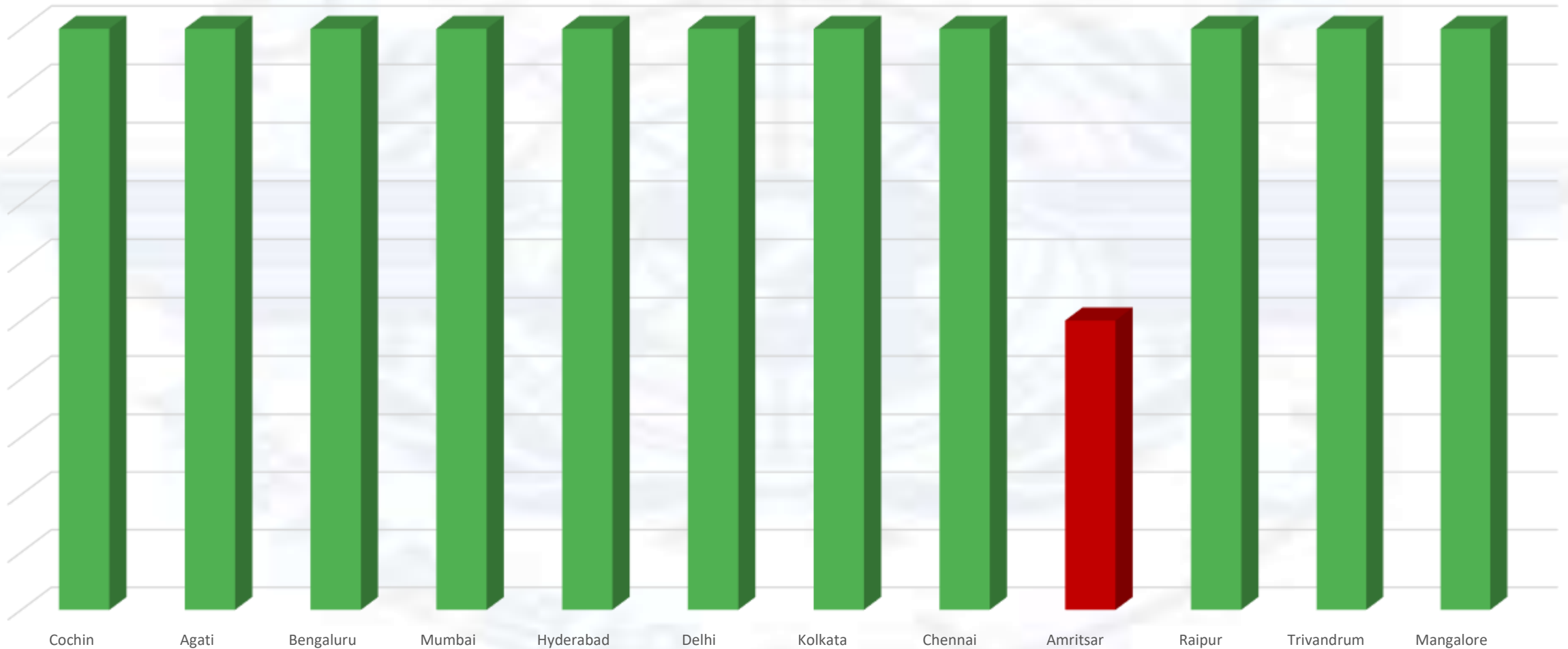
Does a process exist at the aerodrome to trap hazardous wildlife for distant release?



Green = Yes ; Red = No

## Response to Question - 45

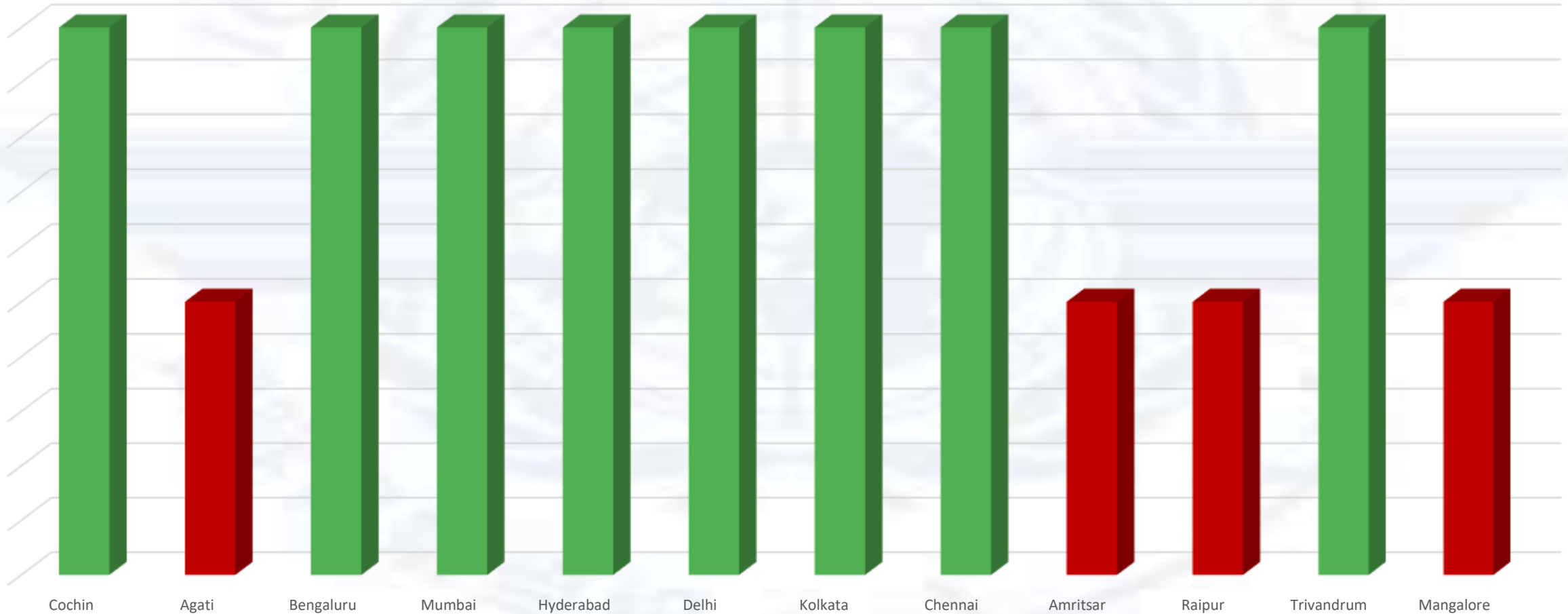
Does the aerodrome operator use any professional rescue groups in wildlife trapping and distant release?



Green = Yes ; Red = No

## Response to Question - 46

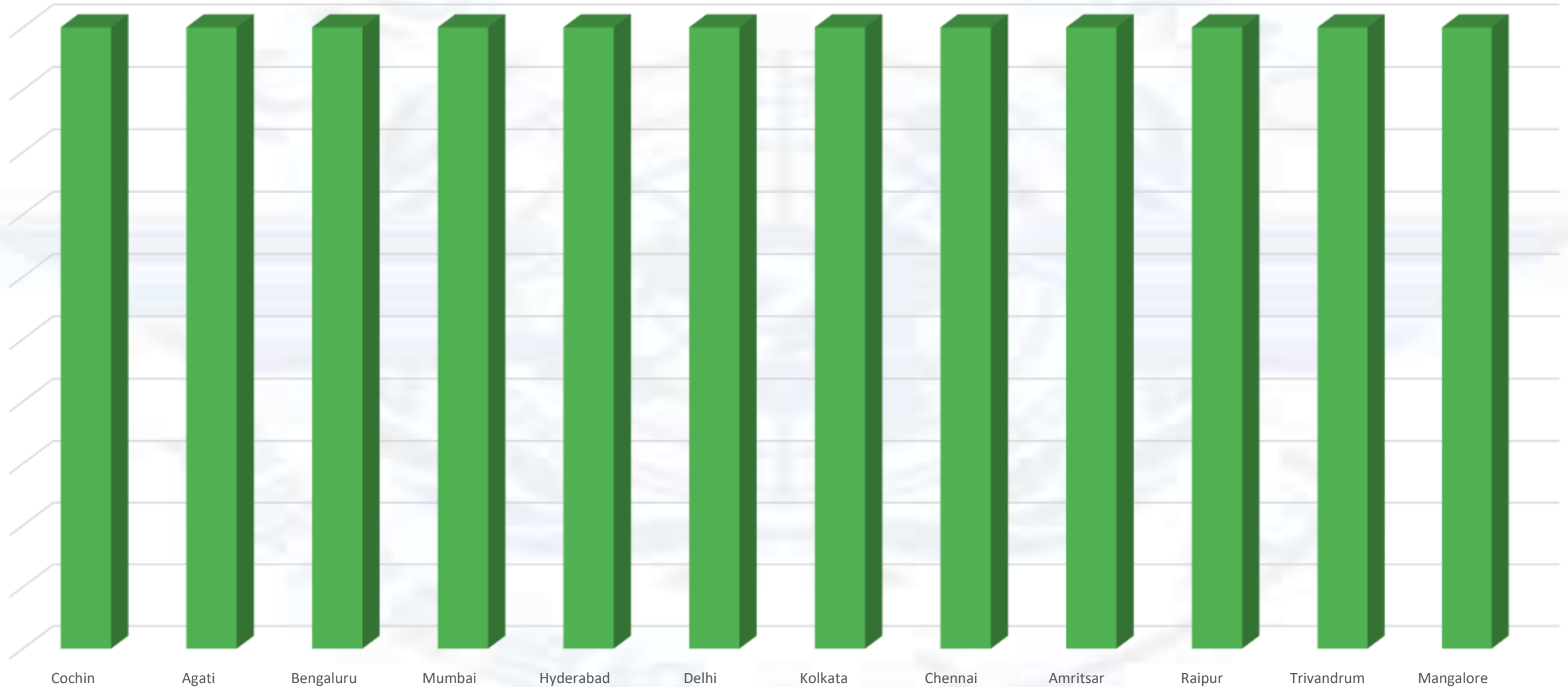
Does the aerodrome operator conduct pest management on the airfield and use chemicals for minimizing big insect (e.g. bird food species) activities and small mammals (e.g. rodents) activities?



Green = Yes ; Red = No

## Response to Question - 47

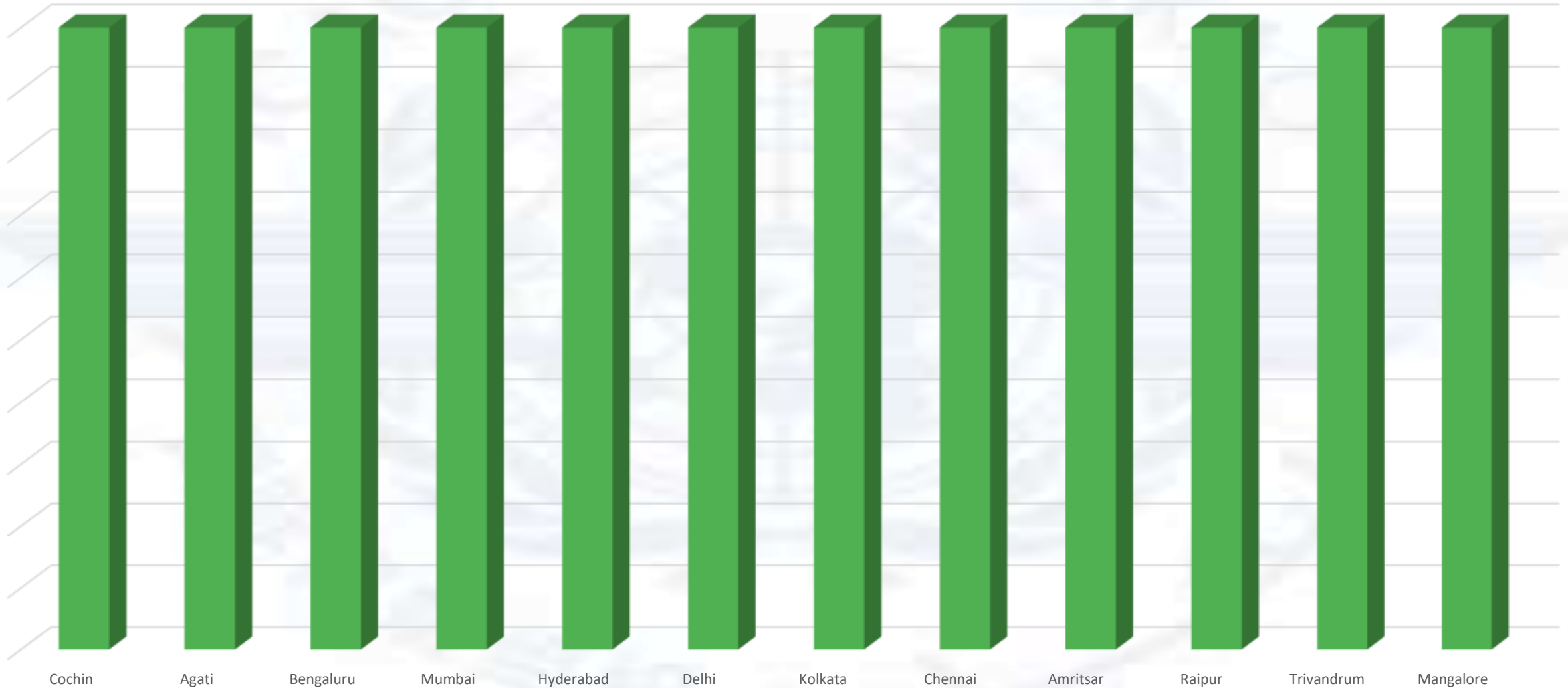
Are buildings kept free of wildlife nesting at the aerodrome?



Green = Yes ; Red = No

## Response to Question - 48

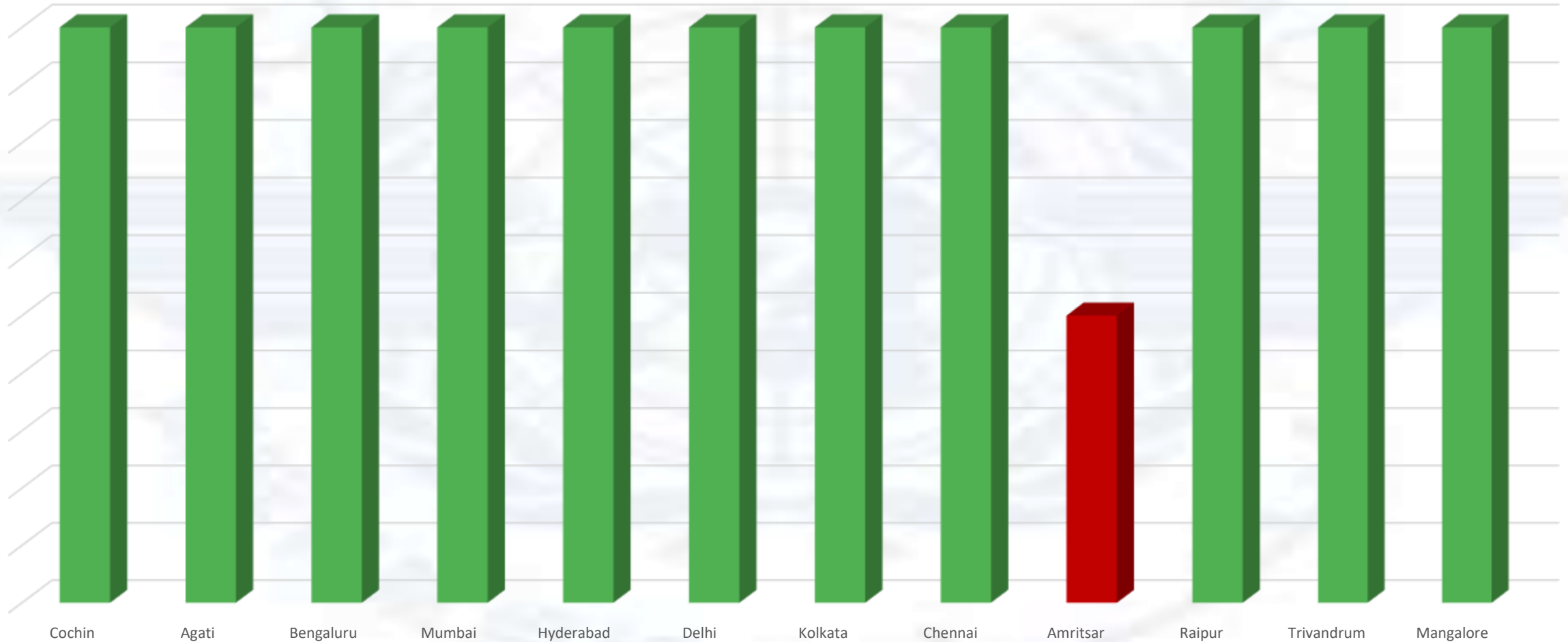
Does the aerodrome operator have a grass maintenance policy?



Green = Yes ; Red = No

## Response to Question - 49

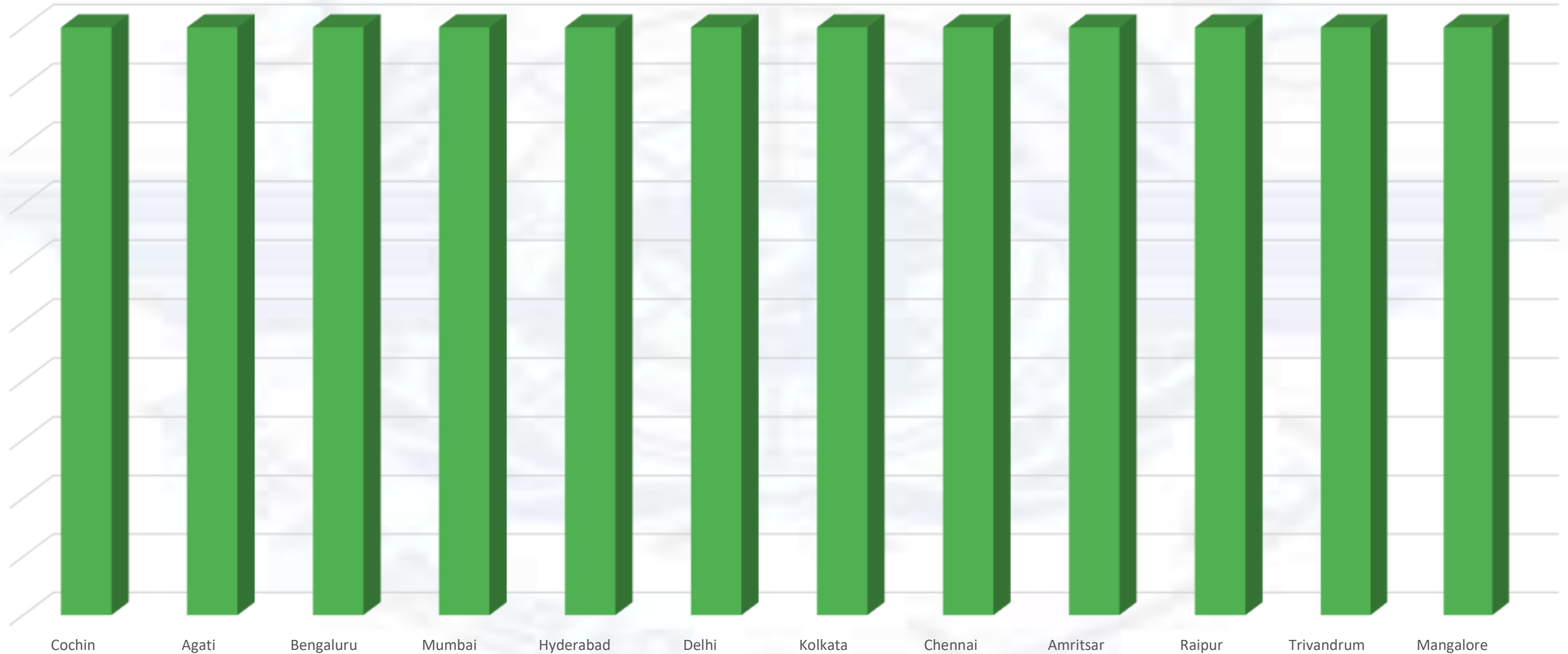
Does the aerodrome operator avoid or limit the habitat for rodents and snake which attract predatory birds and is there a record maintained?



Green = Yes ; Red = No

## Response to Question - 50

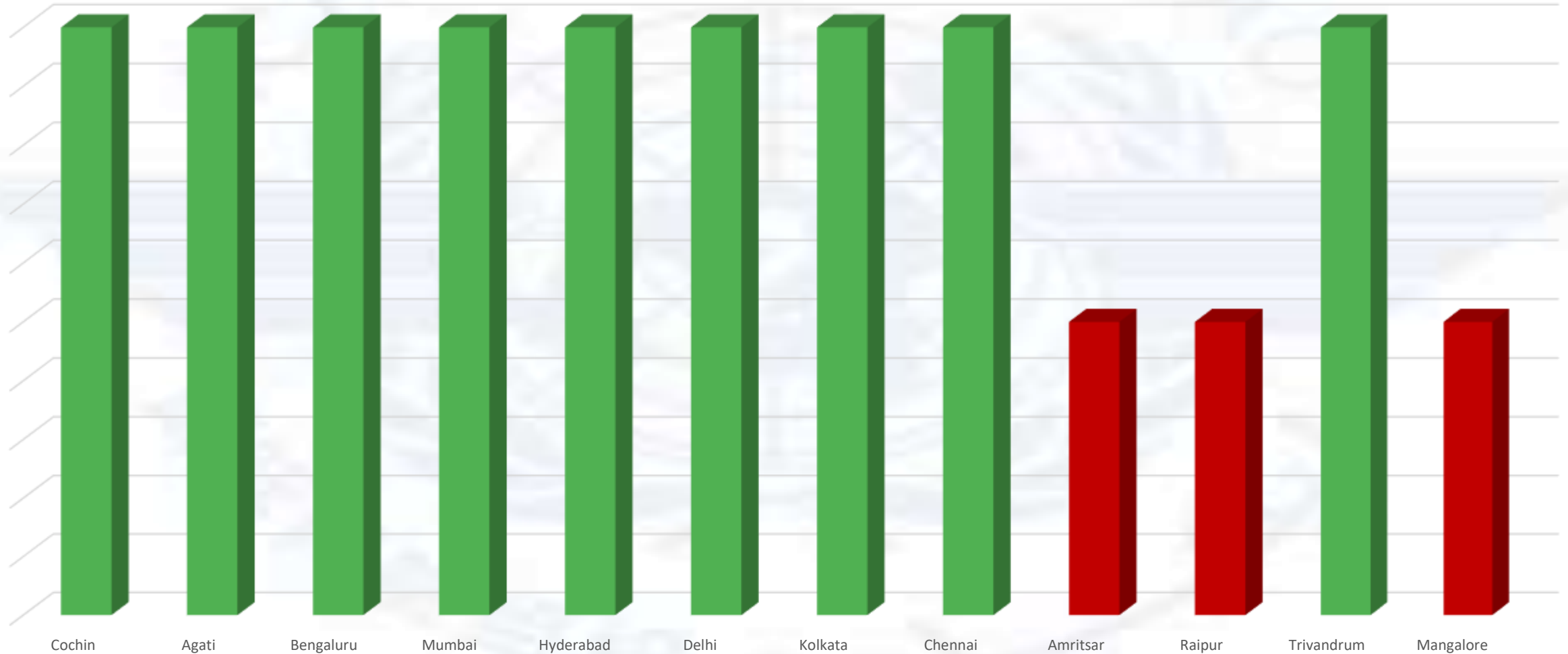
Does the aerodrome operator work with local authorities to ensure that areas outside the aerodrome perimeter do not pose an undue wildlife strike hazard to aircrafts?



Green = Yes ; Red = No

## Response to Question - 51

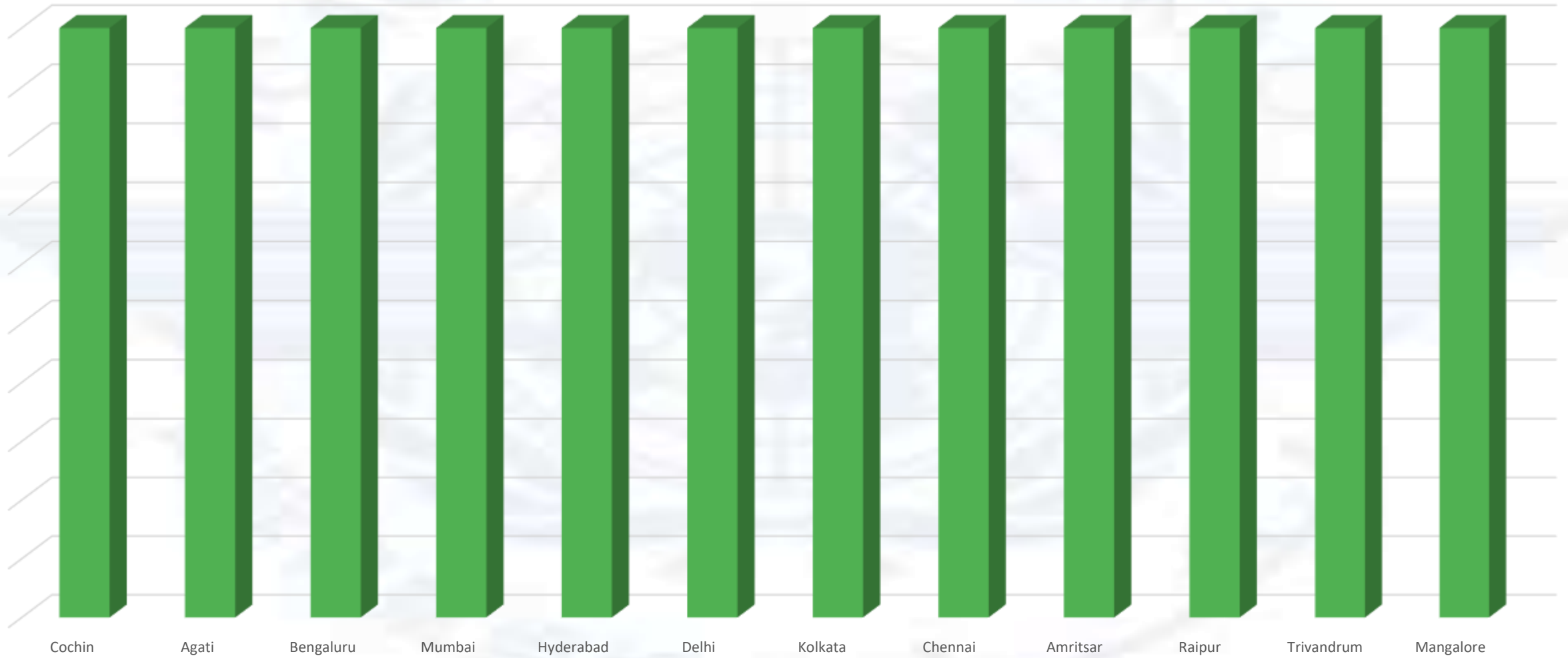
Have public awareness programs been adopted by the aerodrome operator using print media and social media to bring awareness about wildlife strike hazard?



Green = Yes ; Red = No

## Response to Question - 52

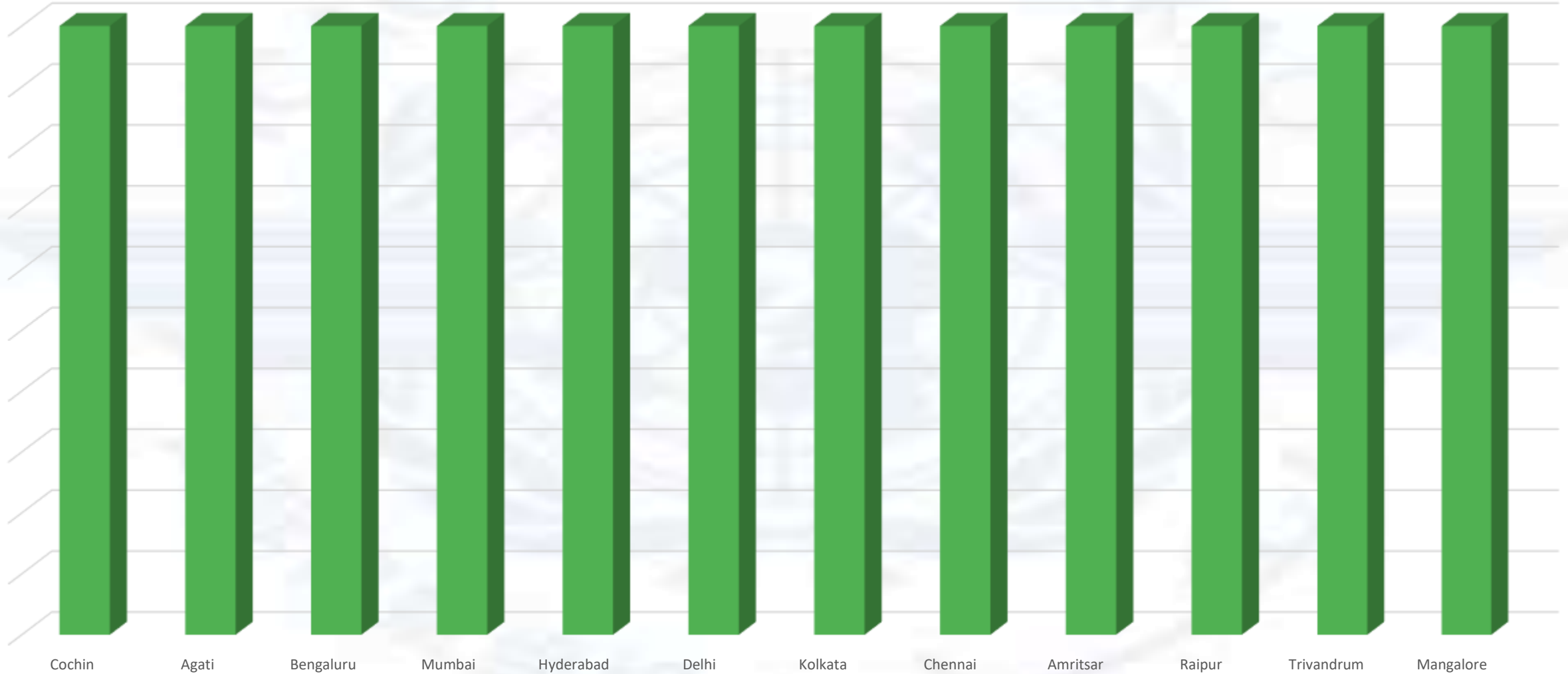
Does the aerodrome operator maintain a record of all wildlife activities?



Green = Yes ; Red = No

## Response to Question - 53

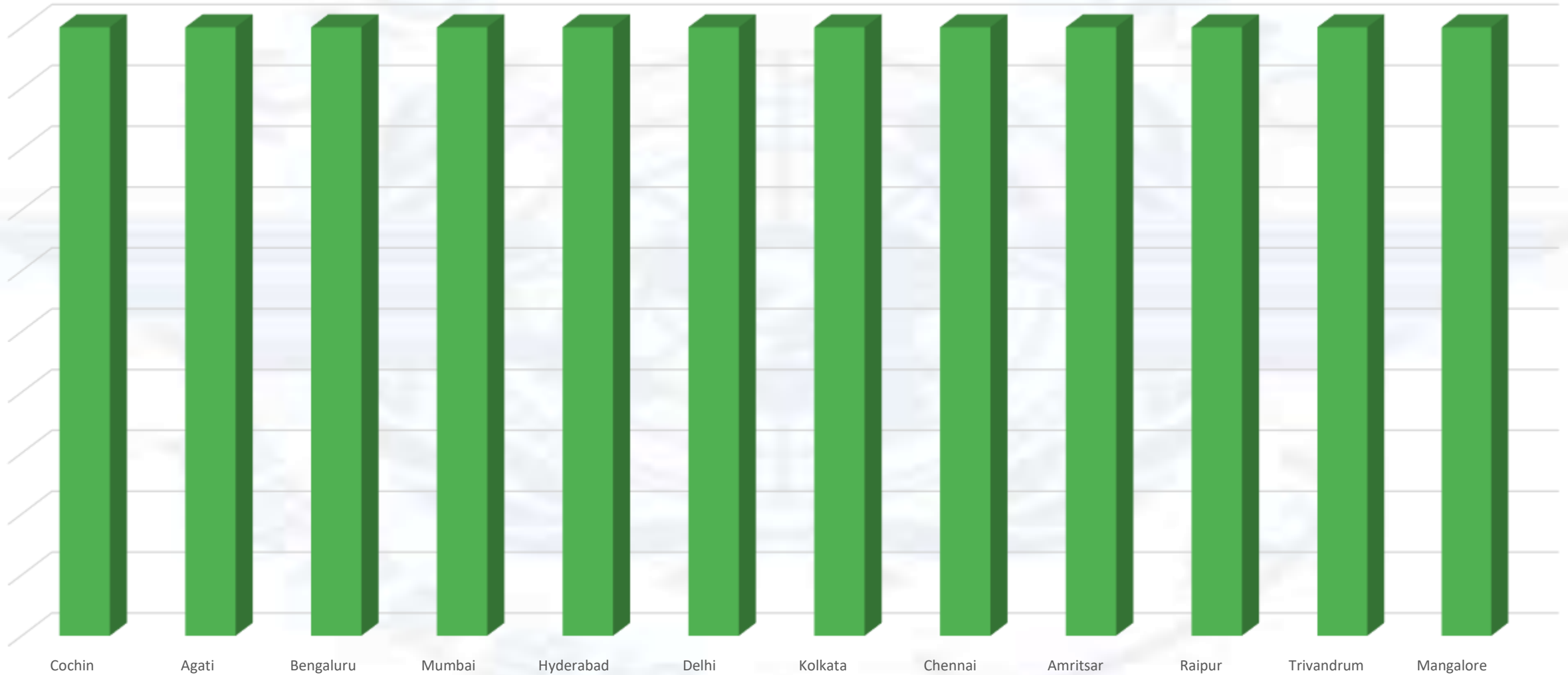
Does the aerodrome operator maintain a record of all confirmed wildlife strikes?



Green = Yes ; Red = No

## Response to Question - 54

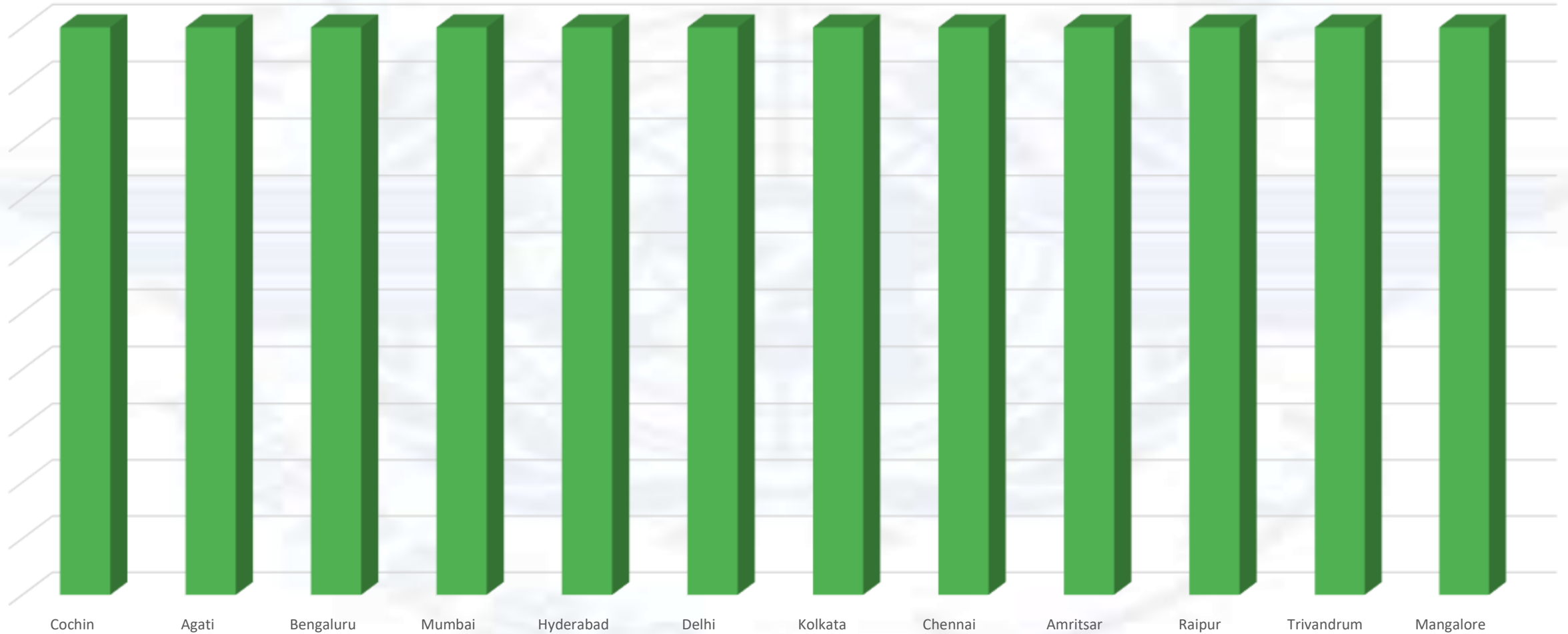
Does the aerodrome operator maintain a record of all unconfirmed wildlife strikes?



Green = Yes ; Red = No

## Response to Question - 55

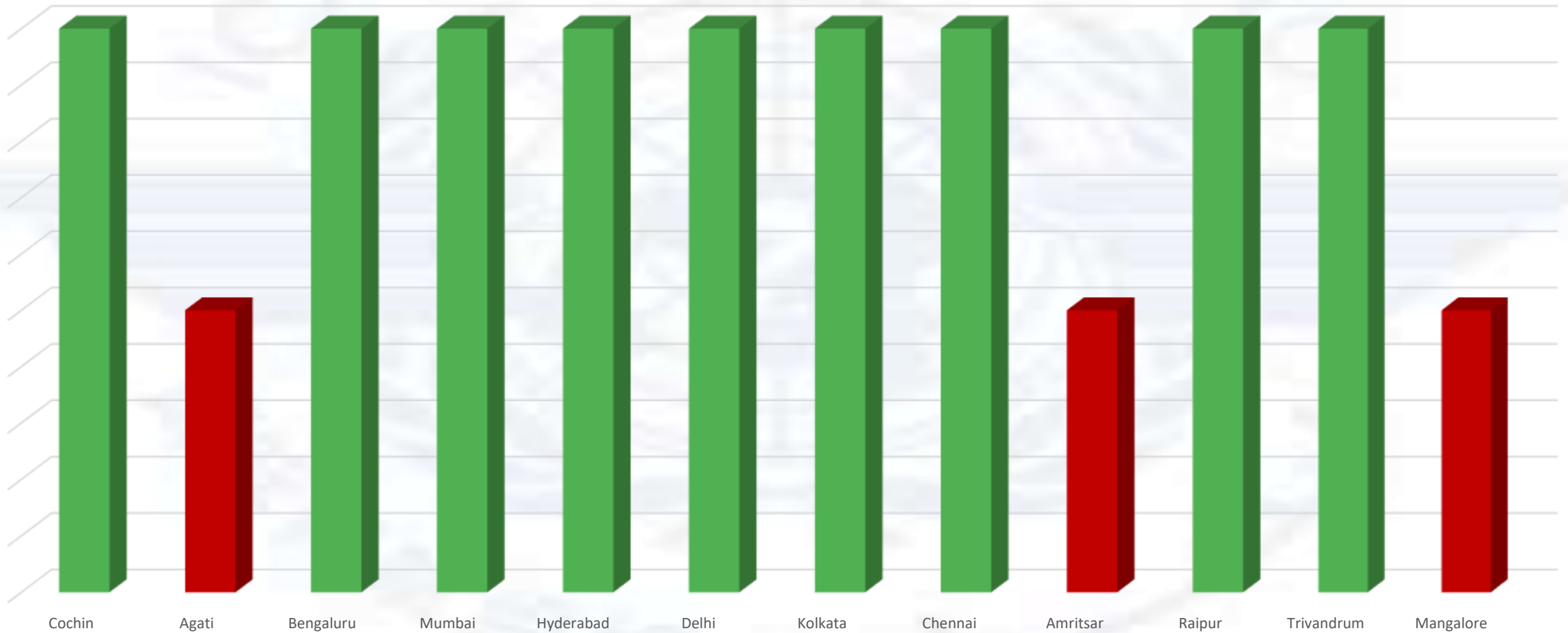
Does the aerodrome operator have a procedure to report confirmed or un-confirmed wildlife strikes to the regulatory authority?



Green = Yes ; Red = No

## Response to Question - 56

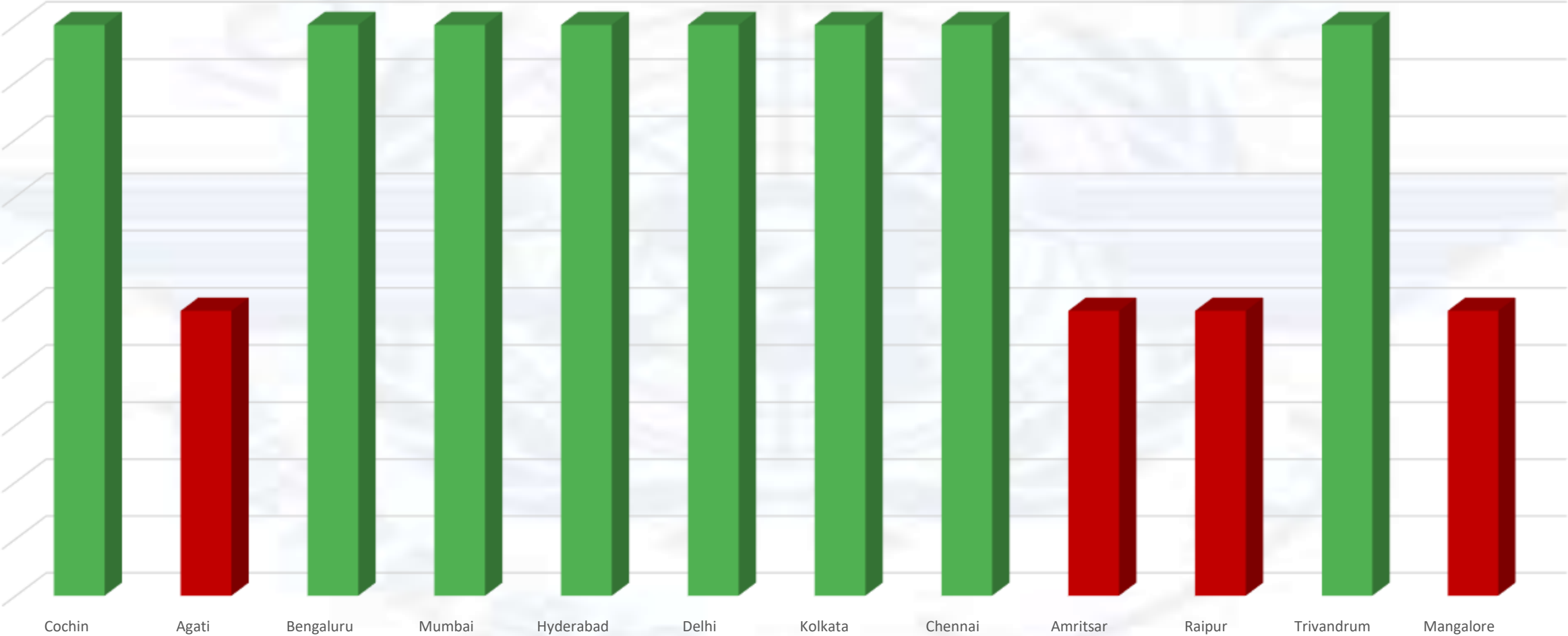
Are wildlife control unit (WCU) personnel equipped with proven knowledge through education or training courses, of wildlife identification?



Green = Yes ; Red = No

# Response to Question - 57

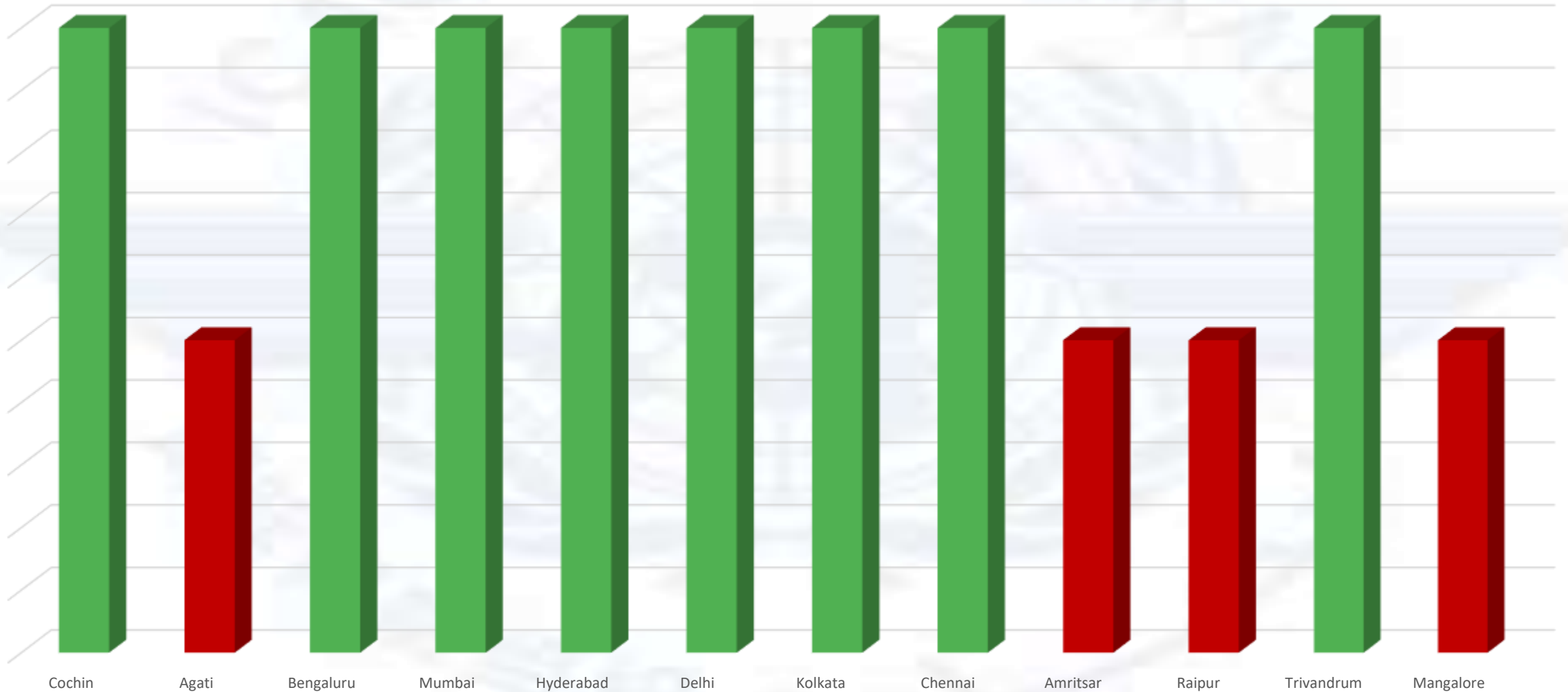
Do WCU personnel use binocular and field guides for wildlife identification logs regularly/everyday?



Green = Yes ; Red = No

## Response to Question - 58

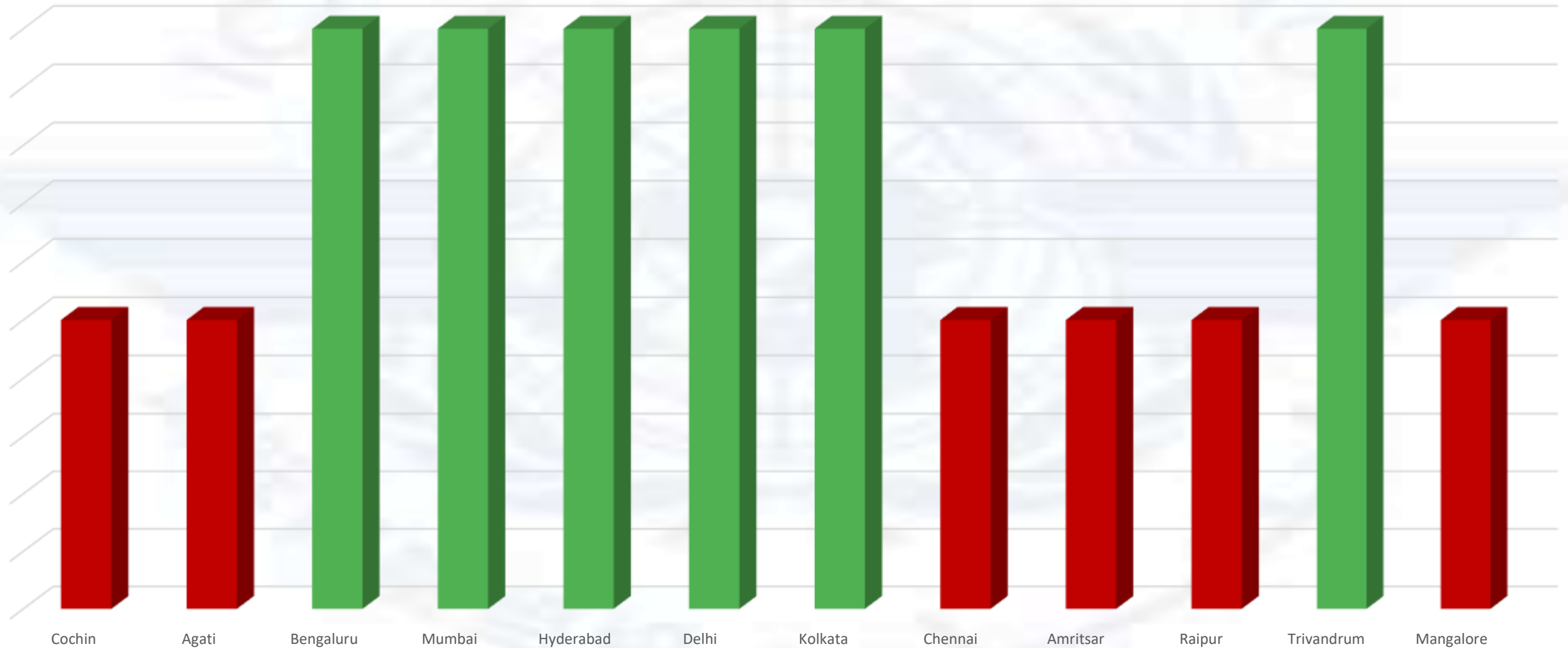
Does the wildlife log contain numbers, species and location of wildlife seen?



Green = Yes ; Red = No

## Response to Question - 59

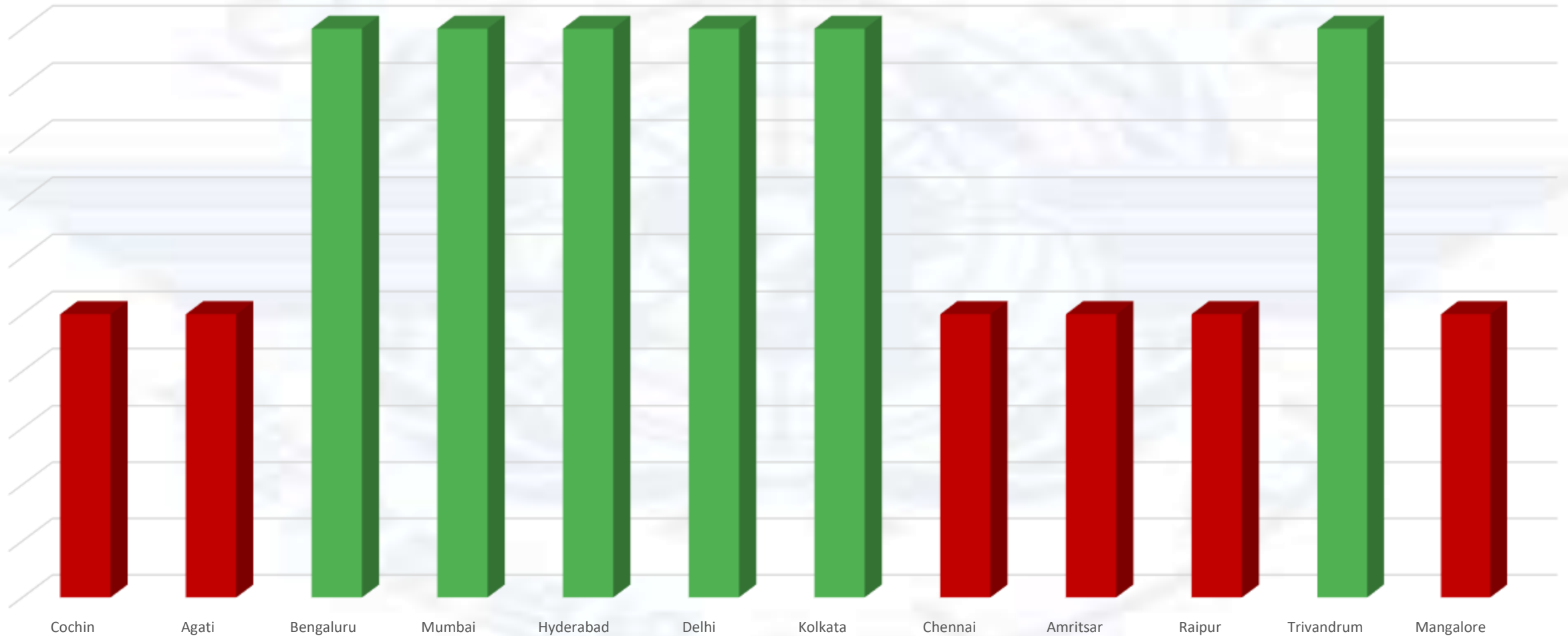
Does the wildlife log contain actions taken to disperse wildlife and results of these actions?



Green = Yes ; Red = No

## Response to Question - 60

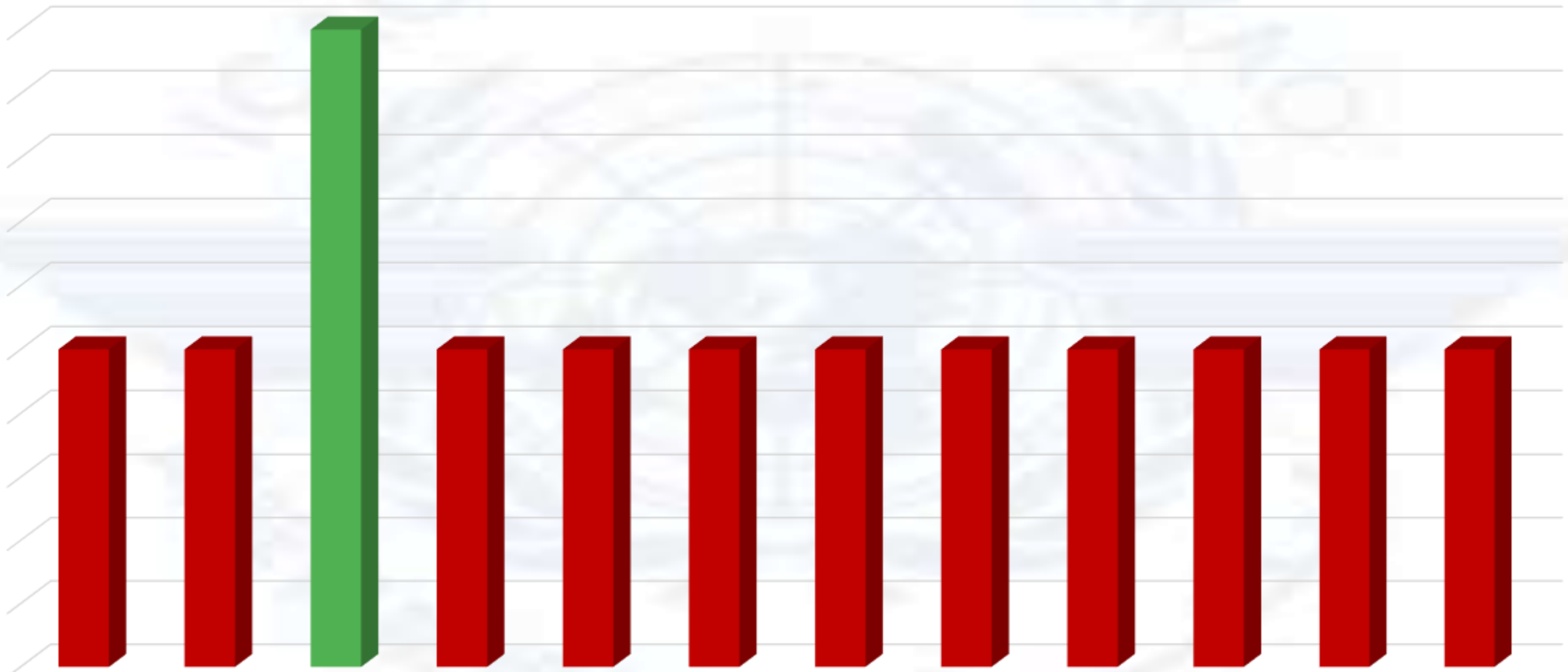
Does the aerodrome operator have a wildlife dispersal report to monitor wildlife dispersal patterns?



Green = Yes ; Red = No

# Response to Question - 61

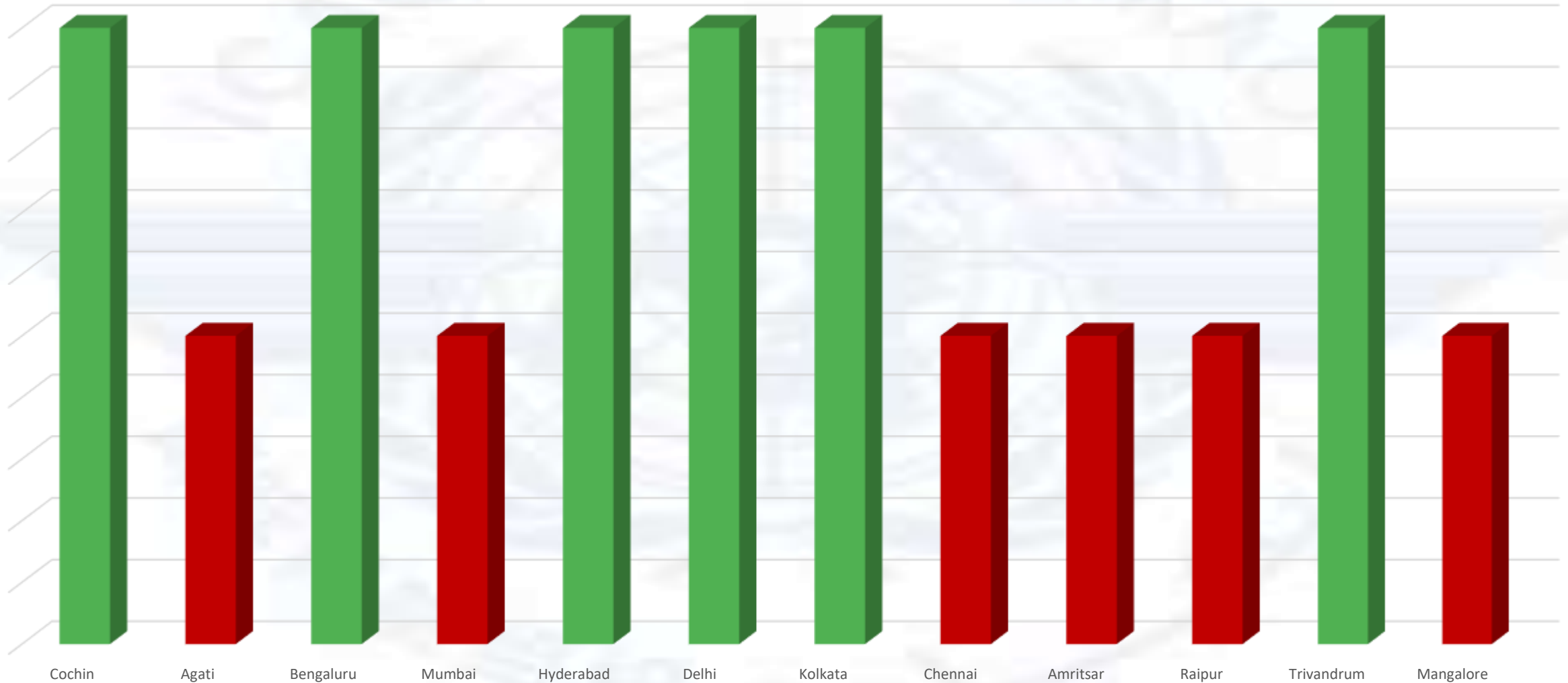
Does the aerodrome operator have live GPS activity reporting?



Green = Yes ; Red = No

## Response to Question - 62

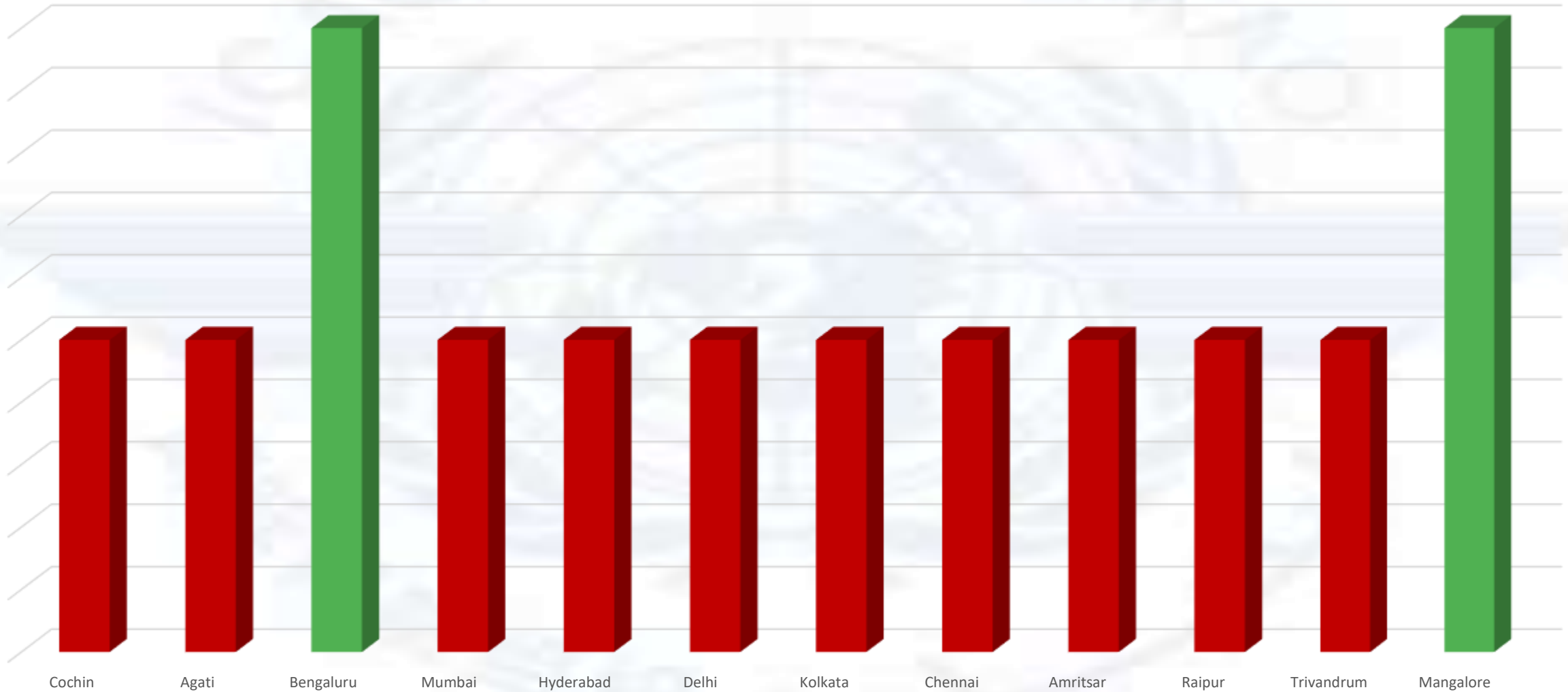
Is the wildlife log completed at regular intervals by competent WCU personnel?



Green = Yes ; Red = No

## Response to Question - 63

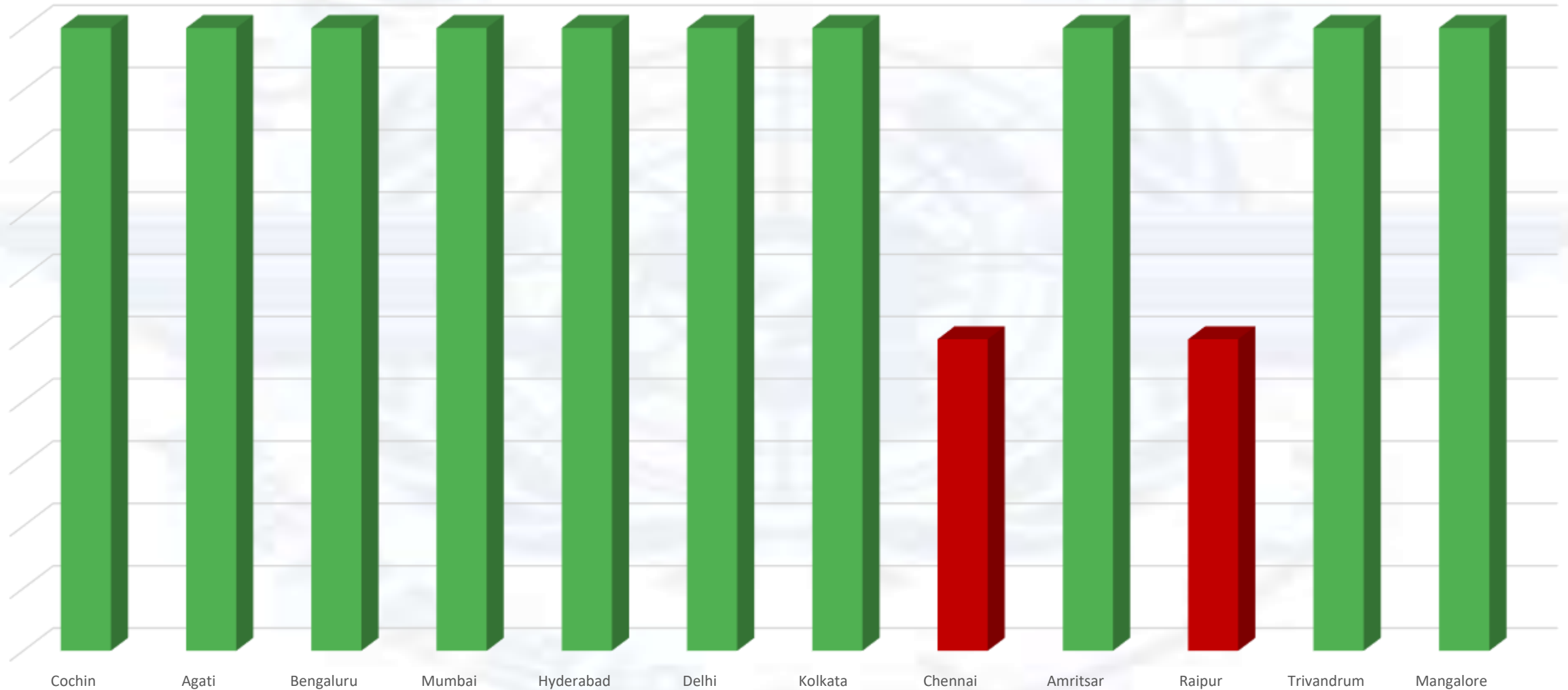
Does the aerodrome operator use technology to record wildlife activity?



Green = Yes ; Red = No

## Response to Question - 64

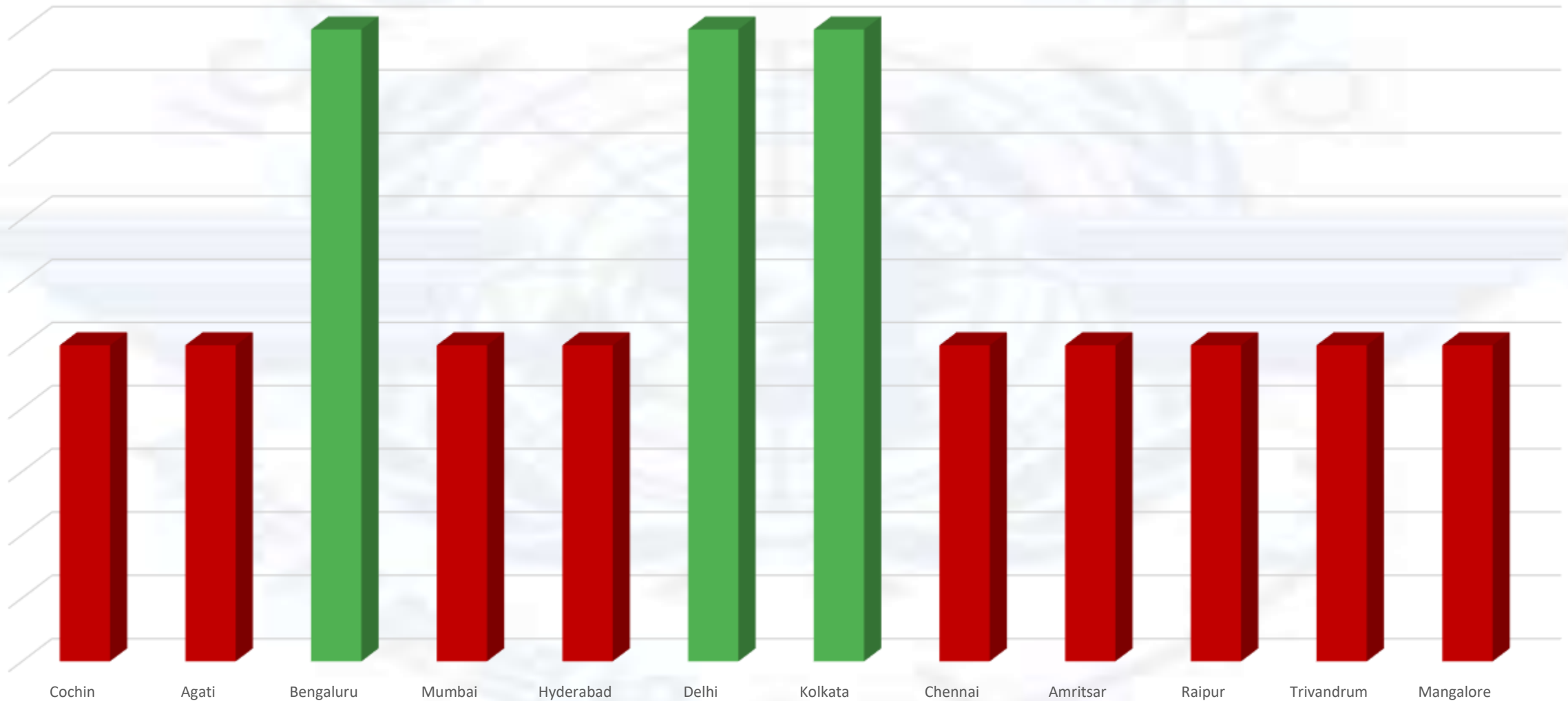
Does the aerodrome operator manually record wildlife activity?



Green = Yes ; Red = No

## Response to Question - 65

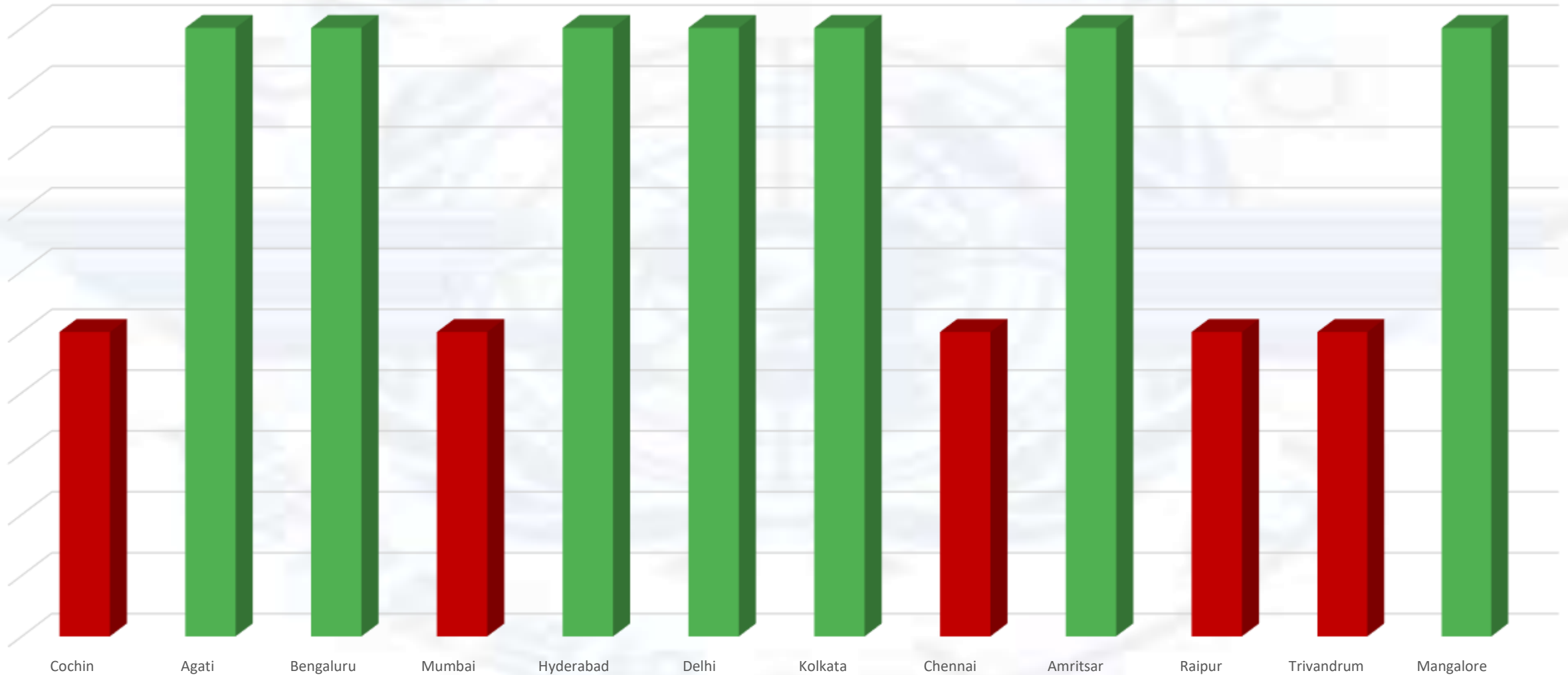
Does the aerodrome operator use technology to study wildlife activity patterns?



Green = Yes ; Red = No

## Response to Question - 66

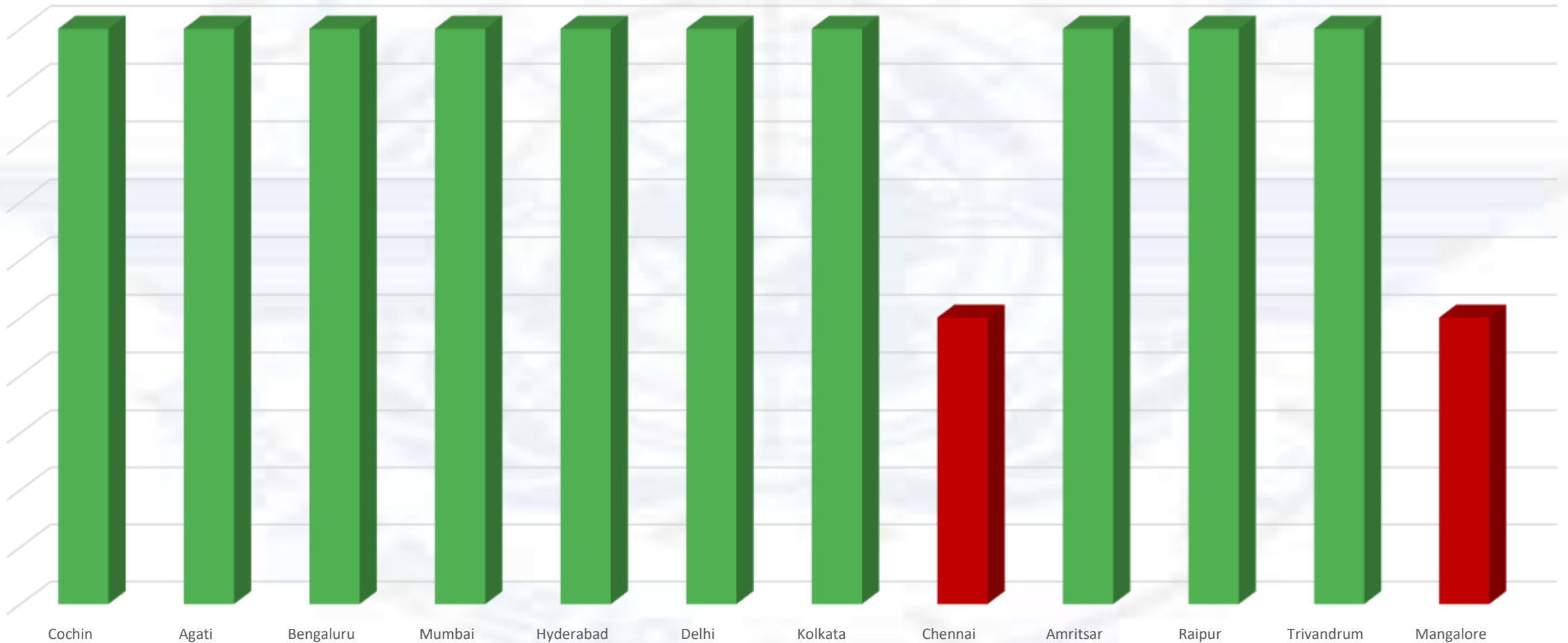
Does the aerodrome operator maintain a dashboard of wildlife activity/pyrotechnics used?



Green = Yes ; Red = No

## Response to Question - 67

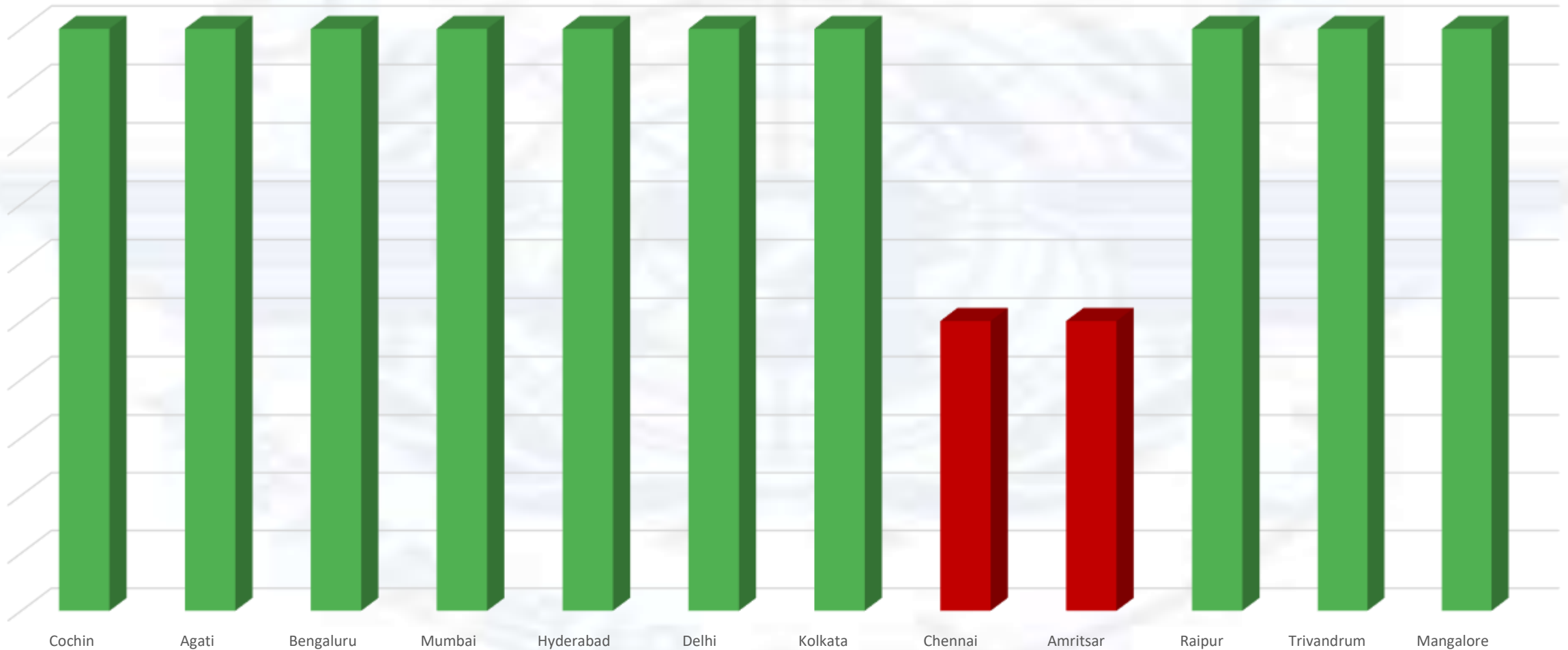
Can aerodrome operator calculate probability of wildlife strike based on activity and number of flights?



Green = Yes ; Red = No

## Response to Question - 68

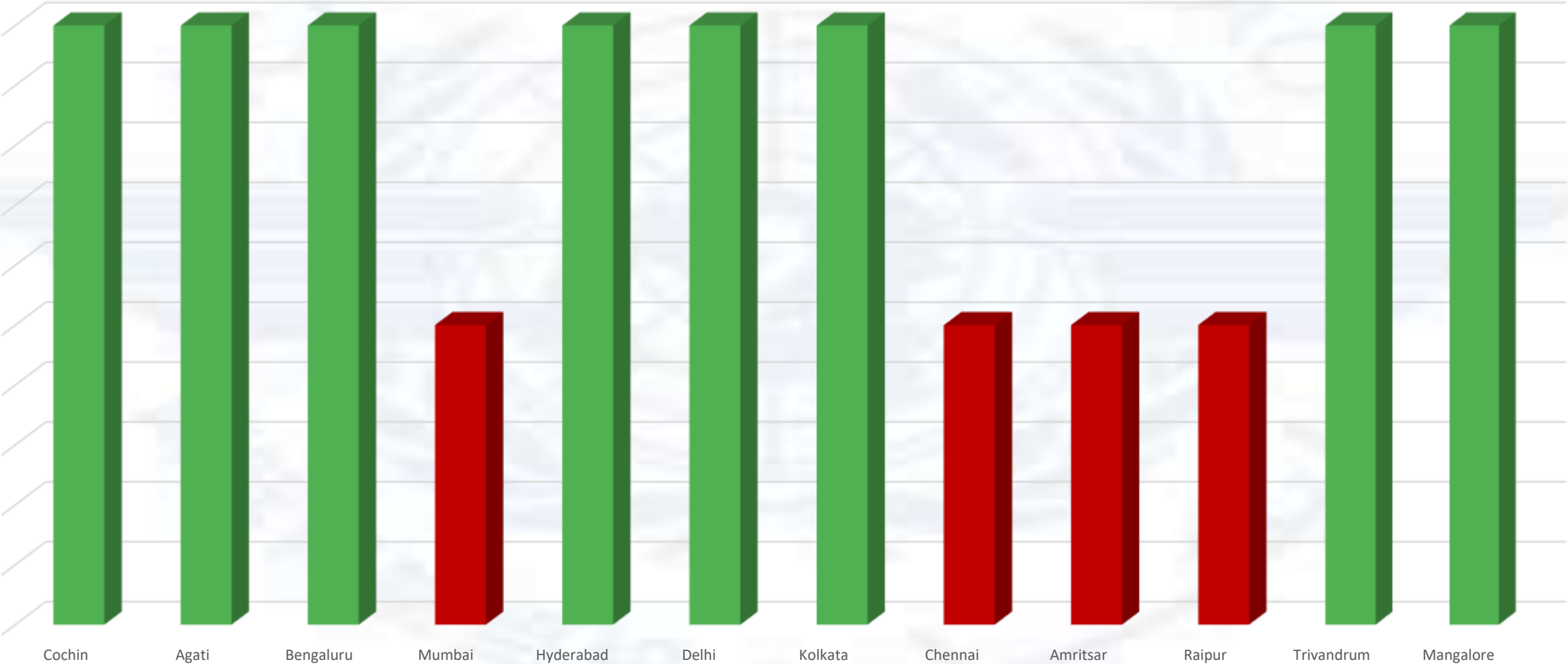
Has the aerodrome operator established system and process for reporting, recording, retrieving the data and analyzing the wildlife strikes and wildlife strike hazard reports?



Green = Yes ; Red = No

# Response to Question - 69

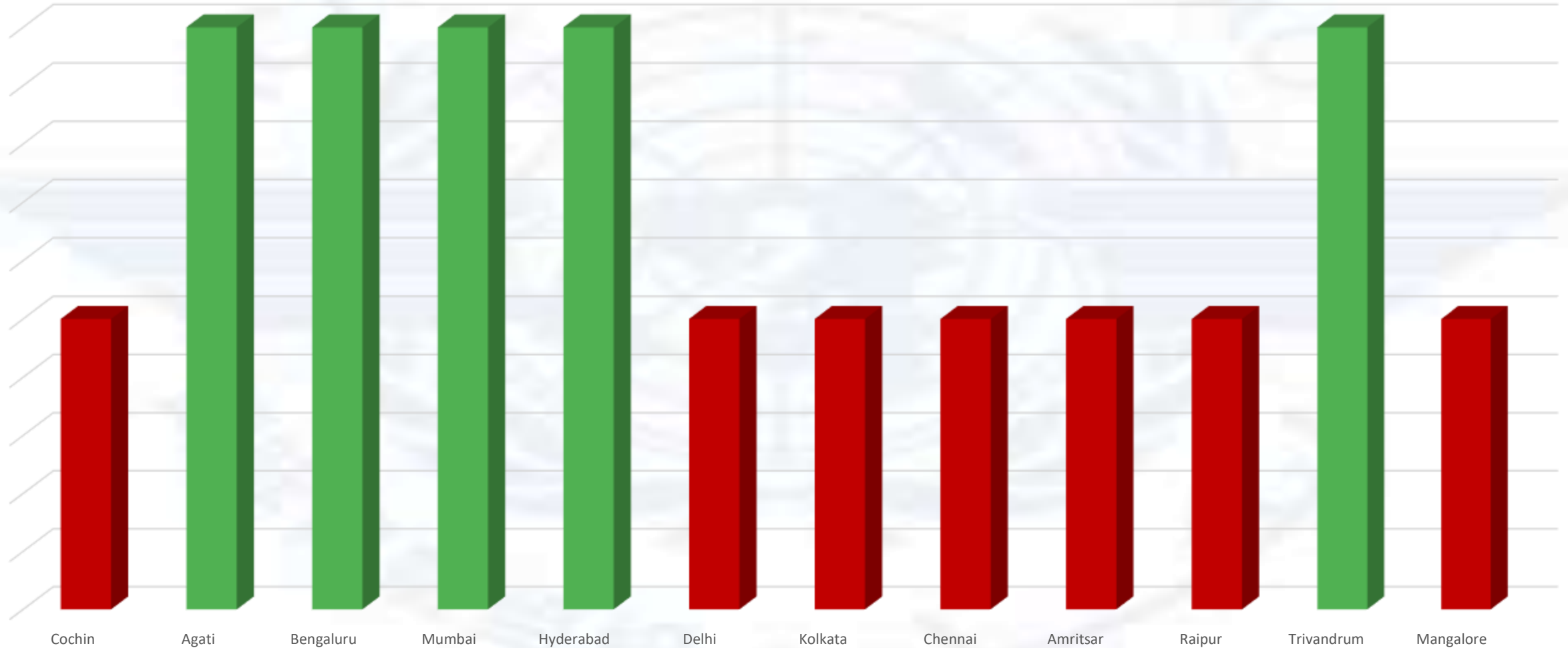
Have aerodrome operators developed mitigation steps in response to outcomes of the wildlife hazard analysis conducted?



Green = Yes ; Red = No

## Response to Question - 70

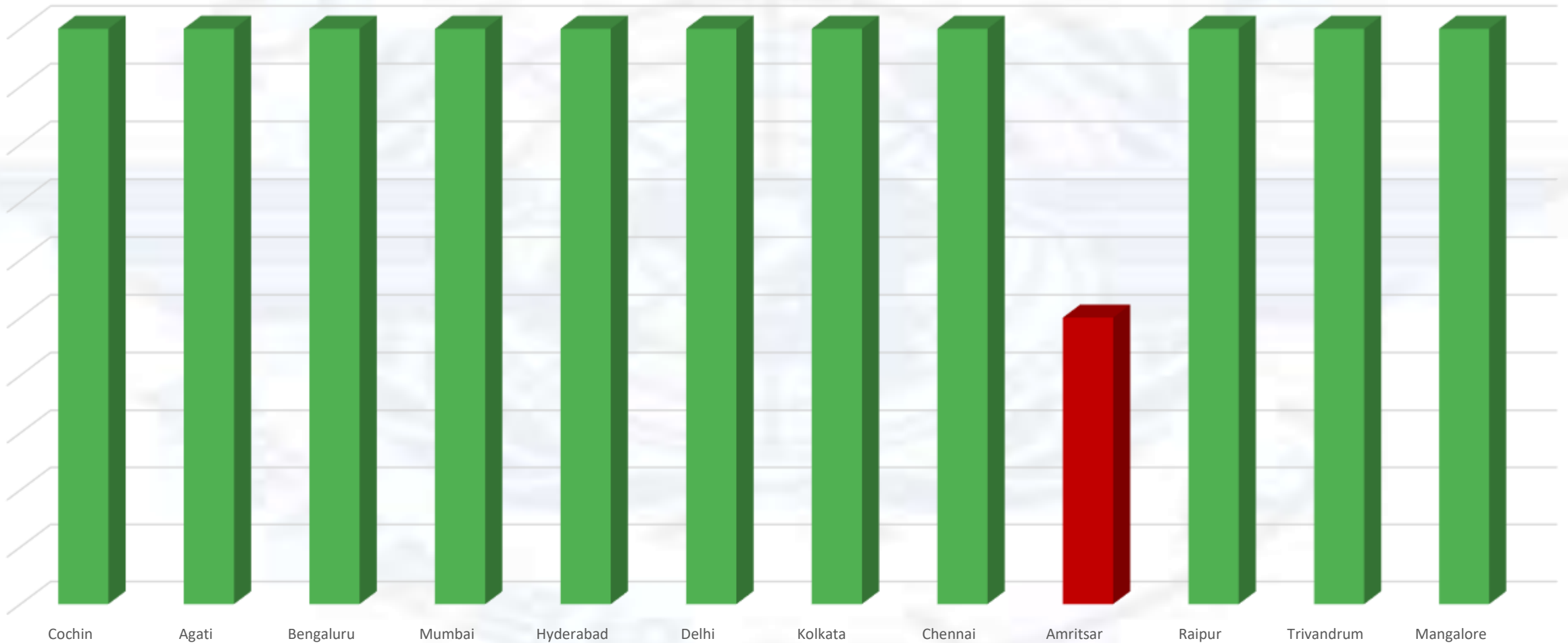
Is wildlife strike data made available to assist other aerodromes in assessing potential new risks, trends and mitigation methods?



Green = Yes ; Red = No

## Response to Question - 71

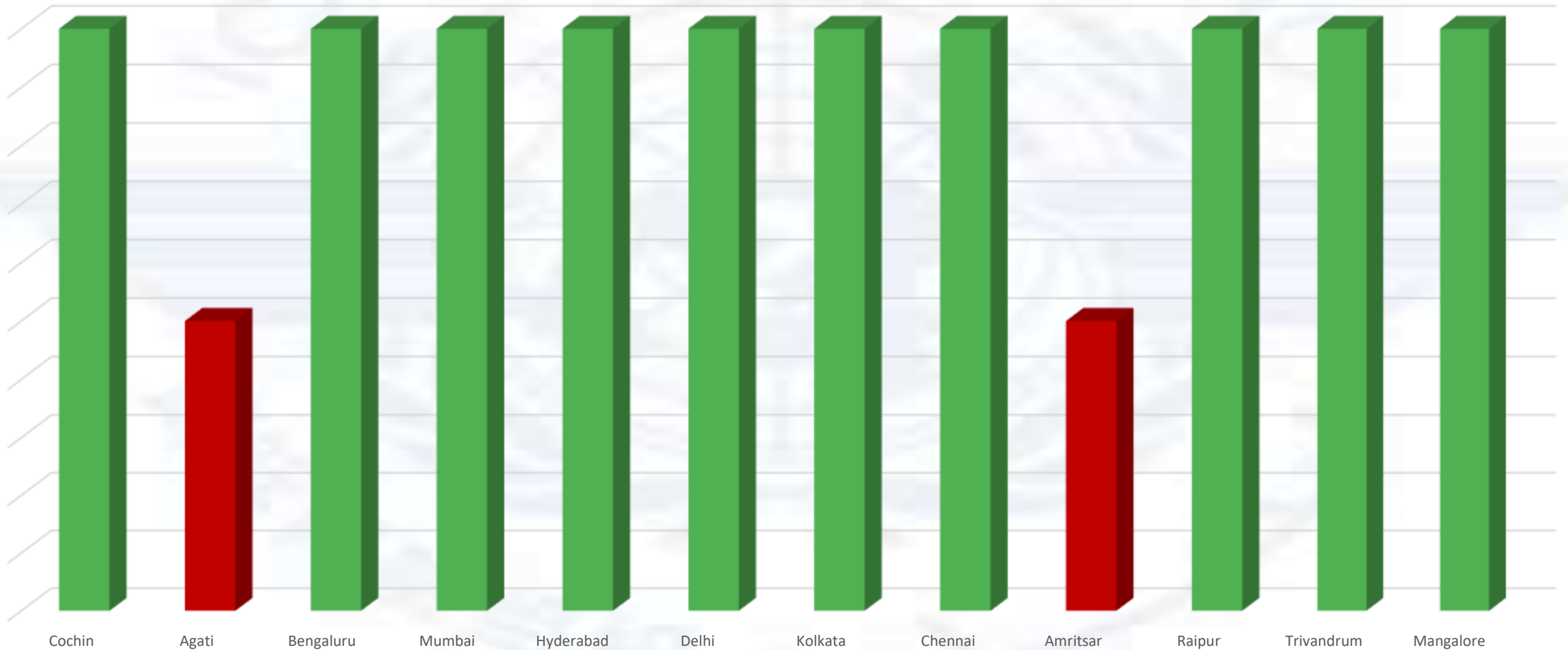
Has the aerodrome operator provided formal training to all personnel prior to initial engagement as wildlife controllers?



Green = Yes ; Red = No

## Response to Question - 72

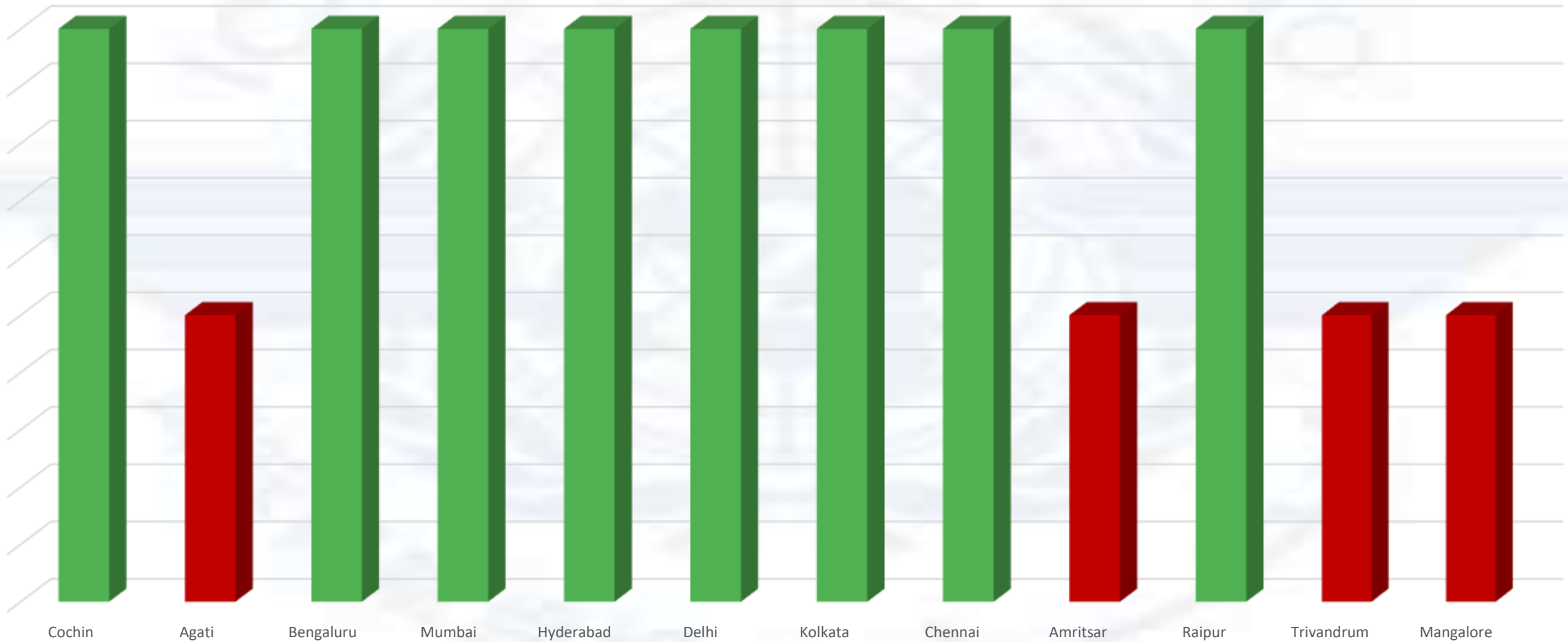
Is the induction and refresher training of staff engaged in wildlife control activities carried out regularly?



Green = Yes ; Red = No

## Response to Question - 73

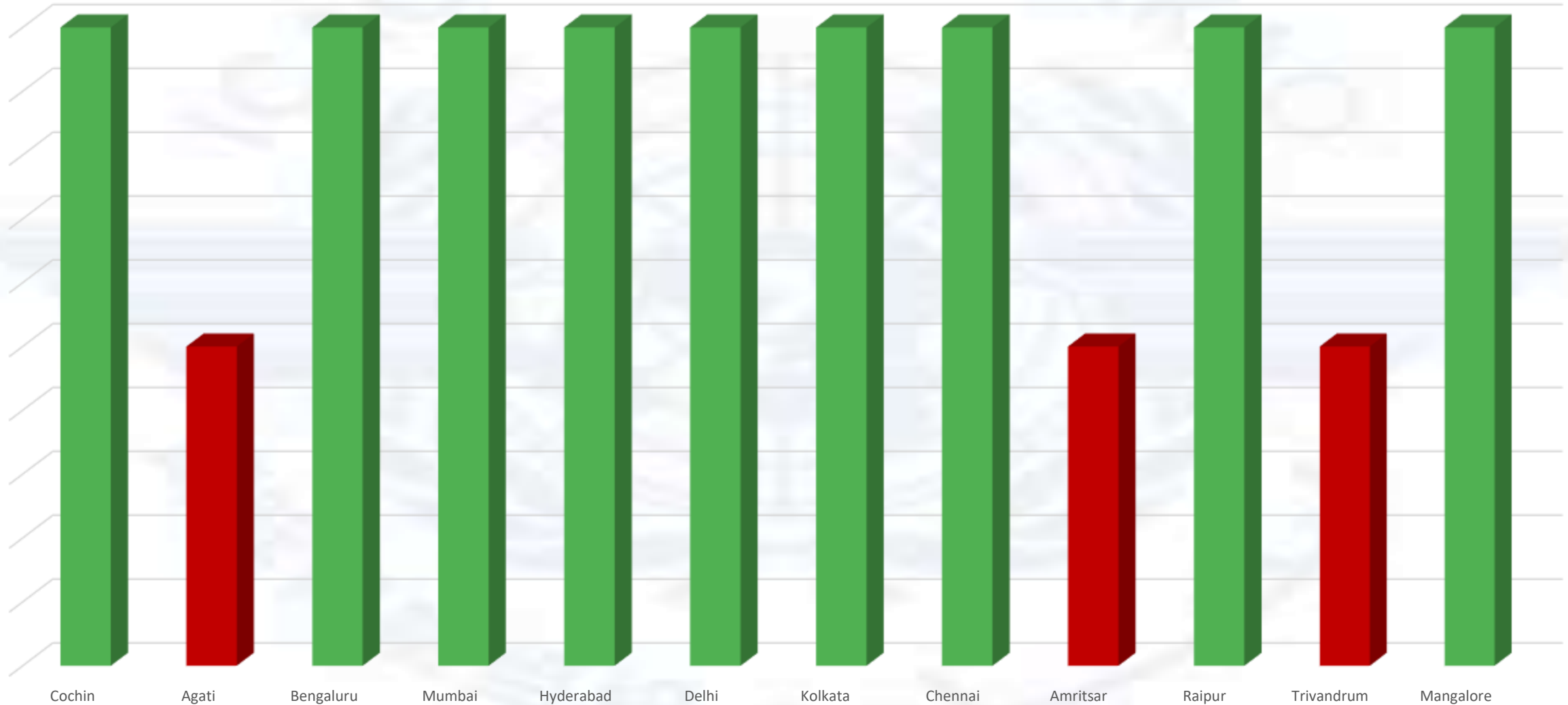
Is the training commensurate with the specific wildlife hazard and size and complexity of the aerodrome operation?



Green = Yes ; Red = No

## Response to Question - 74

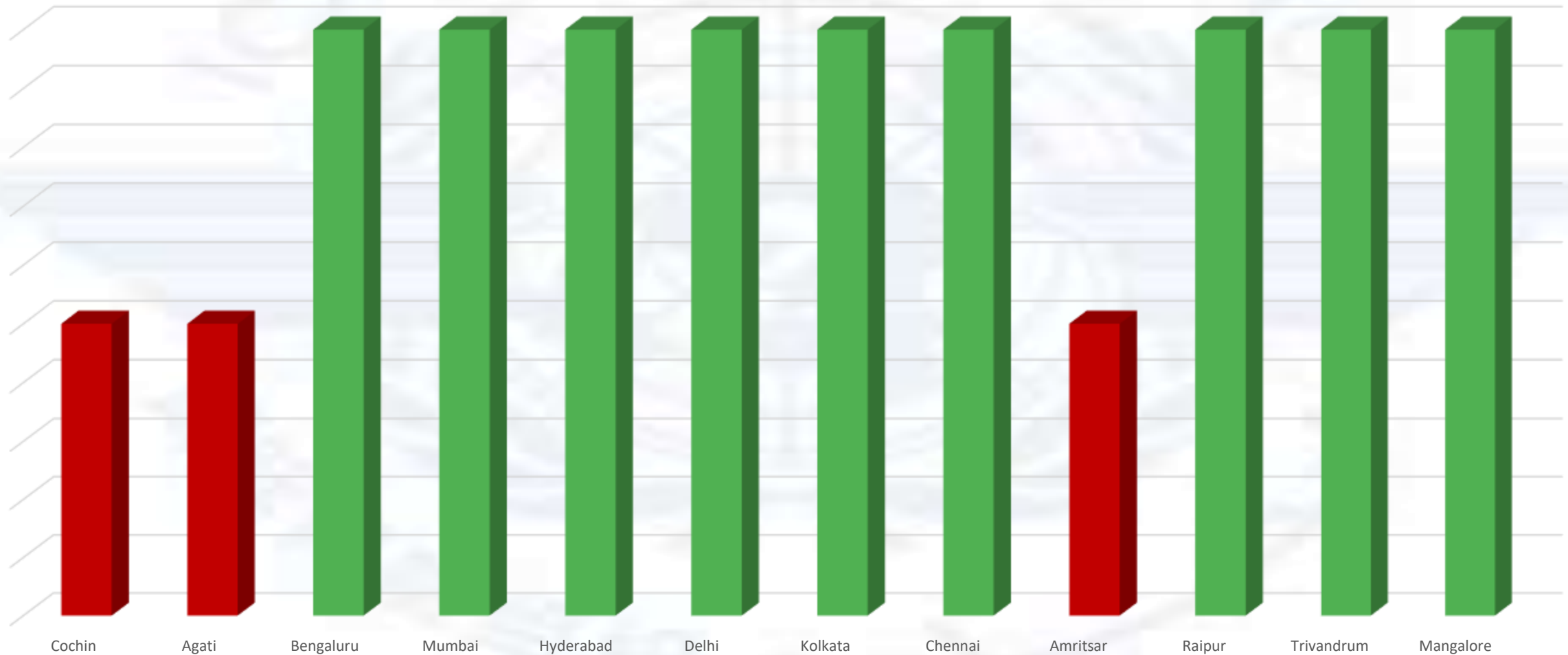
Is the training fully documented and records retained and available for inspection?



Green = Yes ; Red = No

## Response to Question - 75

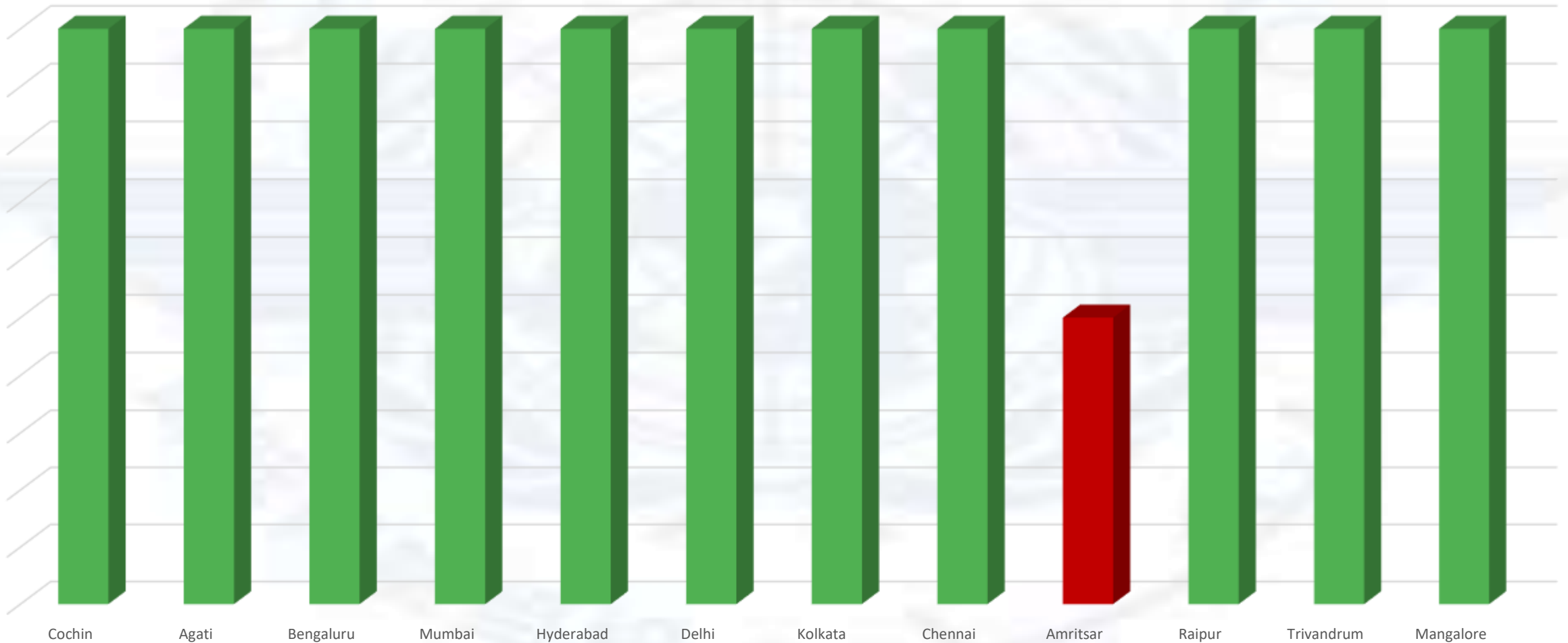
Is the training provided by qualified aerodrome wildlife control personnel or specialists with proven experience in this field?



Green = Yes ; Red = No

## Response to Question - 76

Is feedback considered, and included where relevant and appropriate, in a process of continuous improvement?



Green = Yes ; Red = No