Save the Goan Bullfrog Campaign: Assessing the Local Community's Awareness, Perceptions, and Engagement in Conservation Efforts

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, "Save the Goan Bullfrog Campaign: Assessing the Local Community's Awareness, Perceptions, and Engagement in Conservation Efforts" is based on the results of investigations carried out by me in the economics Discipline at the goa business school, Goa University under the Supervision of Dr. Pranab Mukhopadhyay and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not be responsible for the correctness of observations / experimental or other findings given the dissertation. I hereby authorize the University authorities to upload this dissertation on the dissertation repository or anywhere else as the UGC regulations demand and make it available to any one as needed.

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COMPLETION CERTIFICATE

This is to certify that the dissertation report "'Save the Goan Bullfrog' Campaign: Assessing the Local Community's Awareness, Perceptions, and Engagement in Conservation Efforts" is a bona-fide work carried out by Ms Shreya Sushant Kanolkar under my supervision in partial fulfilment of the requirements for the award of the degree of Master's in the Discipline economics , at the goa business school, Goa University.

Signature and Name of Mentor

Goa Business School ★ Goa University ★

Signature of Dean of the School

SchoolStamp

Date: 15/05/2024

Place: Goa University

Preface

The survival of numerous species is essential for maintaining the delicate balance of ecosystems, with each species playing a unique role in the intricate web of life. Amphibians, including the Goan Bullfrog found in the Western Ghats region of India, are particularly important as indicators of environmental health. The Goan Bullfrog serves as a powerful symbol highlighting the urgent need for collective conservation efforts.

This study focuses on the core of a significant conservation campaign known as the "Save the Goan Bull Frog" initiative. It narrates a story that intertwines human awareness, perception, and involvement with the fragile fabric of biodiversity conservation.

Through an extensive examination of the campaign's impact on the local community, this study aims to uncover the complex dynamics that govern the success of such initiatives. By analysing the public's knowledge, attitudes, and behaviours towards the Goan Bullfrog and its conservation, it sheds light on the strengths and weaknesses of current strategies, revealing pathways for more effective and inclusive conservation efforts. This research journey encompasses both quantitative and qualitative approaches, gathering insights from a diverse range of participants throughout the north goa region. With hope and determination, i present this work as a modest contribution to the collective endeavour of securing a sustainable future for the Goan Bullfrog and the countless species that coexist in our extraordinary planet. May this research ignite a renewed sense of urgency and inspire unified action, reminding us that the destiny of these extraordinary creatures is intricately intertwined with our own and it is our duty to safeguard every living organism around us.

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Shreya Sushant Kanolkar

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Abstract

The primary objective of this study was to assess the impact of the "Save the Goan Bullfrog" campaign on raising awareness, engaging the public, and influencing behavior towards the conservation of the endangered Goan bullfrog in North Goa, India. A comprehensive mixed-methods approach was employed, involving a survey of 104 local residents using a structured questionnaire to gauge their knowledge, attitudes, perceptions, and involvement in conservation efforts related to the Goan bullfrog. The results indicated a general recognition of the ecological significance of the Goan bullfrog among the participants. However, there was a notable lack of awareness regarding specific conservation initiatives, limited engagement in educational programs and campaigns, and insufficient understanding of local regulations aimed at protecting the species and its habitats. Although a majority of respondents expressed a willingness to contribute to conservation activities, their actual participation remained minimal. Furthermore, the study revealed discrepancies in awareness levels between the Goan bullfrog and other endangered species such as the olive ridley turtle. These findings underscore the importance of implementing improved communication strategies, fostering community involvement, adopting collaborative approaches that involve various stakeholders, maintaining consistent monitoring and evaluation mechanisms, enhancing legal frameworks, and tailoring outreach efforts to effectively safeguard the population of the Goan bullfrog.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Education is often seen as a positive thing, but there haven't been many studies on the costs and benefits of different types of environmental education. Usually, people only think about education in schools or higher education when it comes to the environment. However, Agenda 21, which was created at the Rio Earth Summit in 1992, says that both formal and non-formal education are important for changing people's attitudes. Environmental education should include things like raising public awareness, environmental clubs in schools, sharing indigenous knowledge, and formal education and training. There aren't many studies that measure the impact of formal education on conservation outcomes. The studies that do exist focus on existing educational programs, rather than targeted ones. Generally, these studies agree that formal education has a positive effect, but it's not a straight line. (Van, 2003)

Research within the behavioural sciences and social marketing provides valuable insights for effectively incorporating people into conservation solutions and attaining desired behavioural results (Heimlich & Ardoin, 2008; Lee & Kotler, 2015; McKenzie-Mohr et al., 2011; Reddy et al., 2017). various behaviour change models have been devised to elucidate pathways to behaviour and have been utilized in addressing conservation issues. Factors such as human attitudes, social identity, and perceived obstacles can all influence behaviour. Researchers have consistently shown that merely providing knowledge and raising awareness is inadequate in achieving pro-environmental outcomes, even when these outcomes may be advantageous to the individual (Abrahamse, Steg, Vlek, & Rothengatter, 2005; Ardoin, Heimlich, Braus, & Merrick, 2013; De Young, 1993; McKenzie-Mohr, 2011; Steg & Vlek, 2009).

It is crucial to assess the impact of conservation interventions to ensure they are achieving the intended outcomes, especially given the growing threats to biodiversity and the need to show project success to donors. While many evaluations focus on effectiveness at the project or organizational level, it is important to link local initiatives to an assessment of the overall effectiveness of species-focused conservation efforts, as most measures of conservation success are based on species-level data. (H ARRIET, J ONATHAN and E. J. M ILNER,2015). Biodiversity conservation outcomes are defined as empirical measures of positive changes in the status of species, their habitats and ecosystems. (James A. ,2007)

Goa is home to around 40 species of amphibians, many of which are endemic to the region of the Western Ghats. Amphibians, often considered as indicators of environmental health, are essential for maintaining ecosystem balance. The Goan bullfrog, known for its unique characteristics and ecological importance, is a focal point for conservation efforts in the area. This species of the Indian amphibian, known for its role in controlling malaria, serves as an important indicator of the overall environmental condition.

Studies conducted by herpetologists and amphibian specialists in Goa, as well as bio-indicators, provide evidence that frog populations in the region are declining, mirroring the global trend. This decline is occurring at an alarming rate, surpassing any previous instances of species disappearance in the past 65 million years. In addition to the studies carried out in 1999 and 2002 by amphibian specialists in collaboration with international organizations such as the International Union for the Conservation of Nature and Natural Resources (IUCN), researchers from the Department of Zoology at Goa University, the Goa Forest Department, and other institutions have also conducted basic surveys and compiled checklists. However, it is crucial to establish long-term monitoring programs for frog populations in Goa, given that the frogs found in this region.

. In Goa, the Indian Bullfrog (Hoplobatrachus Tigerinus) and the Jerdon's Bullfrog (Hoplobatrachus Crassus) are highly sought after for their meat due to their substantial size. The Indian Pond Frog and Grass Frog are also targeted for hunting on occasion. The increasing demand for frog meat in restaurants operating illegally has led to a situation where a single pair of frog legs can be sold for as much as Rs. 65-70 to poachers. As a result of declining populations, both the Indian Bullfrog and the Jerdon's Bullfrog have been included in the Government of India's Schedule-I list of endangered species, as well as the international IUCN Red List of animals facing a significant risk of global extinction.

In 1985, the Indian government implemented a prohibition on the capture and slaughter of wild frogs as per the Wildlife (Protection) Act of 1972. Any individual or establishment engaging in the capture, slaughter, sale, serving, or consumption of frog meat would be in violation of the regulations outlined in the act. Offenders would face severe penalties, including a fine of Rs 25,000 and/or a maximum prison sentence of 3 years. As evidenced in 2008, 10 individuals were apprehended and penalized for breaching this legislation.

Save The Frogs Day stands as the most extensive day dedicated to educating and taking action for amphibian conservation globally. The primary objective is to equip frog enthusiasts with educational resources, innovative concepts, and motivation to enable them to raise awareness about amphibians within their respective communities. From the year 2009 onwards, SAVE THE FROGS! team members and volunteers have organized more than 1,500 educational events for Save The Frogs Day across a minimum of 58 countries worldwide. This significant day is observed annually on April 28th.

In goa 2023 was the 15th consecutive year where the campaign on save the frog was carried out .

the beginning of the monsoon season brings much-needed relief for many, but poses a dangerous situation for frogs, also known as the "jumping chicken." These amphibious creatures are facing threats such as being served as delicacies in restaurants, habitat destruction, and exposure to harmful chemicals in agricultural fields. These concerns were discussed at the Save Frog Campaign 2010 meeting organized by the WildGoa group, with support from the Goa Forest Department. The campaign aims to raise awareness about the importance of protecting frog species. Mr. Clinton Vaz from the WildGoa group noted the positive impact of the campaign over the years, with a decrease in frog poaching incidents. However, concerns were also raised about the use of frogs for dissection in colleges for experiments. Wildlife photographer and herpetologist Mr. Nirmal Kulkarni mentioned the need for a "Know Your Frog" fact sheet to educate the public about urban frog species. The Bullfrog species, in particular, is at risk due to its size and is targeted for its meat. Mr. Kulkarni emphasized the importance of testing water bodies in agricultural fields for chemical content, as pesticides have been identified as a major factor in the decline of frog populations. The WildGoa group urged action to address these issues.(timesofindia)

In the past, the melodious croaking of frogs was a common occurrence following the onset of the monsoon season. However, I a news interview a concerned resident from Bicholim has noted the absence of these delightful sounds. While poaching is identified as a key factor contributing to the decrease in frog populations, there are other significant factors to take into account. The use of pesticides, the shrinking of agricultural lands, and the increasing urbanization leading to more concrete structures are all believed to be playing a role in the disappearance of frogs. The rapid urban development and the growing trend of using pavers even in residential gardens may also be encroaching on their natural habitats. It is important to recognize that the soil, which supports a diverse range of biodiversity, is greatly affected by the increase in concrete structures. Therefore, any conservation efforts aimed at protecting

frogs should commence with a thorough population assessment, as they are easily found in paddy fields and plateaus. Zoologist Manoj Borkar stresses the importance of conducting a census to gain a better understanding of their population dynamics. Furthermore, conservation biologist Aaron Lobo suggests that there could be undiscovered frog species, underscoring the necessity for further research. It is essential to avoid oversimplifying the causes of the declining frog populations and instead consider a wide array of factors. Researchers caution that the disappearance of frogs may not attract significant attention, as they are not large, charismatic animals. Forest department officials acknowledge the need for a more in-depth investigation into this issue and are seeking support from the authorities in Goa to address the decline in frog populations.

In 1985, the central government declared a ban on the catching and killing of frogs under the Wildlife (Protection) Act. Until then, frogs were openly caught and their braised, curried and fried legs served in restaurants. the 'Save the Frog' campaign is coordinated by WildGoa, a network of wildlife enthusiasts and NGOs. It has the full support of the Goa forest department and a number of local as well as international organisations, including Amphibian Ark, GOACAN (Goa Consumer Action Network) and WWF-Goa. (https://lilliandcosta.wordpress.com/

The effectiveness of campaigns to protect the Goan bullfrog is crucial for its survival and broader conservation efforts in Goa. This research aims to evaluate and analyse how these campaigns impact public engagement, influence behaviours, and contribute to the protection of the bullfrog. One important aspect of this research is assessing public awareness, attitudes, and actions towards the conservation campaigns. By analysing these factors, we can gain valuable insights into the effectiveness of conservation messaging and strategies. This evaluation will help identify strengths and weaknesses in current efforts, highlight areas for improvement, and provide recommendations for future campaigns. To gather relevant data,

this study will use questionnaires to collect primary information. These questionnaires will focus on public awareness of the bullfrog, understanding of conservation campaigns, and participation in related activities. By examining these responses, we can better understand the impact of campaigns on public engagement and behaviour. The findings from this research can influence policy-making and guide conservation practices. By understanding what works and what doesn't in conservation messaging and strategies, we can make recommendations to enhance future campaigns. This will lead to more effective conservation efforts and contribute to the protection of the bullfrog and its habitat. Additionally, this research aims to promote public engagement and collective actions towards safeguarding the bullfrog and its habitat. By understanding the impact of campaigns on public perceptions and behaviours, we hope to encourage greater involvement in conservation efforts. (itsgoa.com)

During the Republic Day 2020 parade, Goa presented the theme of 'seashore'. Additionally, the parade featured tableaux such as Goa's 'save the frog' campaign. Making it known nationally . this act would draw more attention to the campaign that is being conducted every year to raise awareness and safeguard the species. (indianexpress)

GOACAN holds Awareness Action on Save the Frogs Day at Mapusa(gomantaktimes)

In commemoration of Save the Frogs Day, volunteers from the consumer forum, GOACAN, organized an Awareness Action program in Mapusa. The main objective of this event was to raise awareness about the urgent need to halt the indiscriminate killing of frogs and to encourage consumers to refrain from consuming frog meat. During the event, forum volunteers displayed placards and distributed information slips to consumers. These materials aimed to educate consumers about the detrimental impact of frog killing on the ecological food chain. It emphasized the importance of consumers adopting an environmentally conscious mindset and rejecting the consumption of frog meat. The Awareness Action

program, which was coordinated by GOACAN, was a part of the ongoing Malaria Awareness Week from April 25 to May 1. The primary goal of this initiative was to inform consumers about the necessity of community involvement in combating vector-borne diseases. Over the years, GOACAN has consistently worked towards creating awareness among consumers regarding the protection of frogs under the Wildlife (Protection) Act of 1972. This act prohibits the capture, sale, and killing of frogs, as well as the serving and consumption of frog meat. Violation of this act can result in severe penalties, including imprisonment for up to three years and a fine of Rs 25,000, when cases are reported to the Forest Department officials.

GOACAN said that they will additionally address the concern with the Tourism Department in order to facilitate efficient communication among all stakeholders in the tourism industry, both domestic and international visitors to Goa, by issuing a suitable advisory on this matter.

1.2 objectives

The study aims to evaluate how conservation campaigns, educational programs, and awareness-raising efforts impact public perceptions, behaviours, and involvement in Goan Bullfrog conservation activities.

The objectives of the study are to

- To see the impact of "save the goan bullfrog" campaign on the perceptions of the people.
- Assess the level of awareness and knowledge about the Goan bullfrog and its conservation status among the local community.

- Examine the local community's perceptions and attitudes towards the importance of conserving the Goan bullfrog.

- Assess the engagement and participation of the local community in Goan bullfrog conservation activities.

1.3 Research question

How conservation campaigns impact public awareness and behaviour towards saving the Goan bullfrog population in Goa?

1.4 Research problem

The research examins the efficiency of initiatives targeted at preserving the Goan bullfrog. The research problem is focusing on comprehending the effectiveness of these campaigns in shaping public perceptions and behaviours concerning the preservation of this distinct amphibian species in Goa.

There is a research gap in assessing the effectiveness of conservation campaigns and educational programs in promoting environmental stewardship, specifically in species-specific projects like the Goan bullfrog protection. Current studies focus on general environmental education and awareness programs, neglecting targeted conservation campaigns such as the Save the Goan Bullfrog initiative. No research has been done to measure the impact of the Goan bullfrog campaign.

1.6 Importance of the study

This research aims to assess the impact of conservation campaigns, educational programs, and awareness-raising initiatives on public involvement in Goan Bullfrog conservation.

Through surveys and data analysis, the study aims to comprehend public perceptions, attitudes, and behaviours related to Goan Bullfrog conservation. Assessing this information would help in better formulation of conservation strategies to safeguard their limited existence.

By identifying factors that influence public participation in conservation activities, this study will give an indepth insights for conservationists, policymakers, and NGOs. This can lead to the development of more focused and successful conservation projects.

The study's results can assist conservation groups and government bodies in customizing their communication strategies, educational programs, and community outreach efforts to effectively involve local residents in conservation work. All this strategies will help in reducing the wastage of financial resources that are invested in this initiatives and focus on areas of strategies that will give a more effective outcome.

1.7 Scope of the study

The study will look at how conservation campaigns, educational programs, and awareness efforts affect public views, actions, and involvement in Goan Bullfrog conservation. It will assess public awareness, attitudes, and participation in conservation projects, and identify factors that impact community engagement. The goal is to improve conservation strategies and increase public participation in biodiversity conservation, specifically focusing on Goan Bullfrog conservation

1.8 RESEARCH METHODOLOGY

The data for this study was collected from primary sources. Primary data was collected from the questionnaire circulated to the residents of goa. Research methodology uses a combination of quantitative and qualitative questions. Questions were asked to collect quantitative data to gather numerical values on public awareness, attitudes, and behaviours related to Goan Bullfrog conservation. This includes using scales, multiple-choice questions, and demographic information to measure responses. Qualitative questions involve questions to gain detailed insights into participants' perceptions, experiences, and motivations regarding conservation efforts. This helps to understand the factors that influence community engagement and the effectiveness of conservation campaigns. Furthermore, data analysis techniques such as descriptive statistics, inferential statistics t-tests, and thematic analysis of qualitative data are used to analyse and interpret the collected data.

1.9 LIMITATIONS OF THE STUDY

The sample might not accurately represent the entire population, which can lead to biased results. For instance, if certain demographic groups are over or underrepresented in the sample, it can impact the generalizability of the findings.

Participants may struggle to accurately remember past experiences or events related to Goan Bullfrog conservation, which can affect the reliability of the collected data.

Individuals who choose to participate in the study may have different characteristics or perspectives compared to those who choose not to participate, potentially biasing the results.

The study's findings may only be applicable to the specific context or population studied and may not be relevant to other regions or communities.

The study may not encompass all relevant variables or factors that influence public engagement in Goan Bullfrog conservation, limiting the depth of analysis.

CHAPTER 2

LITERATURE REVIEW

1) The research conducted by van der Ploeg et al. (2011) focuses on assessing the effectiveness of an environmental education campaign (CEPA) in the preservation of the Philippine crocodile population in the northern Sierra Madre region. Through the distribution of a structured questionnaire to 549 participants from different barangays, such as core, peripheral, urban, and control areas, the study delves into the participants' socioeconomic background, knowledge about crocodiles, attitudes towards conservation, and the impact of CEPA initiatives. Furthermore, field observations, ethnographic techniques, and quarterly monitoring of the crocodile population contribute to the evaluation of the long-term effectiveness of the CEPA campaign. The results of the study reveal a significant positive influence of the CEPA campaign in increasing awareness and changing attitudes towards the conservation of Philippine crocodiles. By utilizing a counterfactual comparison method, the research identifies a decrease in intentional crocodile killings as a direct result of the campaign. Additionally, the study emphasizes the cost-effectiveness of different CEPA initiatives in improving awareness and garnering support for conservation efforts. From a methodological standpoint, the study utilizes SPSS 15.0 for data analysis, incorporating binary logistic regression analysis, odds ratios, and Pearson's chi-square test to examine the impact of CEPA initiatives on cognitive and emotional outcomes. The study distinguishes between passive, active, and interactive CEPA outputs, comparing their cost-effectiveness, reach, and influence on participants' awareness and support for crocodile conservation. In summary, van der Ploeg et al. (2011) offer valuable insights into the effectiveness of the CEPA campaign in promoting awareness, changing attitudes, and addressing human-induced threats to the Philippine crocodile population

in the research area. The study underscores the crucial role of communication, education, and public awareness campaigns in wildlife conservation efforts, particularly in settings with limited resources like developing nations.

2) The research conducted by Howe et al. (2012) examines the effectiveness of a media campaign in raising awareness and promoting conservation efforts for the Critically Endangered saiga antelope, Saiga tatarica, in the Pre-Caspian region of Russia. By conducting 250 semi-structured interviews in eight villages, the researchers assessed the impact of the campaign by measuring changes in attitudes over a three-year period and the amount of support pledged for saiga conservation as a behavioural indicator. The results of the study demonstrate that the media campaign successfully stimulated positive shifts in attitudes and behavioural intentions towards saiga conservation. Notably, the reinforcement of information played a crucial role, as individuals who retained knowledge about saiga conservation showed a positive correlation with their ecological understanding of the species. Additionally, individuals who had greater exposure to saigas and those who were subjected to multiple conservation interventions exhibited more favourable behavioural intentions towards saiga conservation. Furthermore, the study highlights that the extent of attitudinal change was influenced by the interaction between the timing of the media campaign and the age of the respondents. This emphasizes the importance of considering socio-demographic factors and cultural backgrounds when designing public awareness campaigns to effectively enhance attitudes towards conservation efforts. In conclusion, this research underscores the significance of tailored public awareness campaigns in improving attitudes towards conservation, emphasizing the need to align campaign strategies with the characteristics

of the target audience for optimal effectiveness in promoting the conservation of endangered species such as the saiga antelope.

3) Pearson, Lowry, Dorrian,. Et al(2014) conducted a study to assess the effectiveness of a conservation campaign conducted at Melbourne Zoo in Australia. This campaign focused on raising awareness about the threats posed by palm oil to the survival of orang-utans and advocated for mandatory palm oil labelling. To ensure ethical considerations, the study obtained approval from the University of South Australia Human Research Ethics Committee and the research/ethics panel at Zoos Victoria. The study employed a longitudinal design, collecting data at four different time points: baseline, 6 months into the campaign, 12 months into the campaign, and 6 months after the campaign concluded. Data collection involved distributing surveys to visitors above 18 years of age with sufficient English proficiency at the orang-utan exhibit in Melbourne Zoo. Various educational tools were utilized during the campaign, including a video narrated by a prominent Australian TV presenter and featuring celebrity endorsements, petition cards for visitors to sign in support of mandatory palm oil labelling, a dedicated website, and social media dissemination. The study assessed visitor satisfaction, knowledge about orang-utans, attitudes toward orang-utans, and support for palm oil labelling. The findings of the study indicated that visitors expressed high satisfaction with their overall experience at the zoo, with mean scores consistently above four on a five-point scale. Moreover, the campaign resulted in significant increases in visitor willingness to modify their future behaviour to support orang-utan conservation, as well as increased support for mandatory palm oil labelling. The study also observed notable shifts in visitor perceptions regarding the importance of orang-utan conservation to their friends and family, suggesting that the campaign successfully

influenced social norms and attitudes. Furthermore, the study demonstrated an increase in self-reported donations to conservation organizations that support orang-utans, along with a decrease in self-reported purchases of unsustainably sourced palm oil. These findings indicate the campaign's success in influencing visitor behaviour towards more sustainable practices.

4) Dr. Rodney D'Silva's (2015) in his seminal research on commercial frog farming in rural Goa presents a thorough analysis of the potential for sustainable frog cultivation as a feasible alternative to wild capture, addressing conservation needs and economic prospects. By employing a detailed mixed-method approach that includes interviews with local stakeholders and secondary data analysis, D'Silva not only evaluates the technical and economic aspects of frog farming but also explores the socio-cultural factors that influence its adoption and sustainability. This study illuminates the complex relationship between traditional practices, market forces, and environmental concerns, highlighting the intricate connection between human livelihoods and ecosystem well-being. Additionally, D'Silva's work emphasizes the significance of community involvement and capacity-building programs in promoting resilient agro-ecological systems and preserving biodiversity. Therefore, by providing nuanced insights into the socio-economic and ecological aspects of frog farming, this research makes a substantial contribution to both academic discourse and practical endeavours aimed at advancing sustainable rural development and wildlife conservation.

5) Latinopoulos, Mentis, and Bithas (2016) conducted a thorough investigation to assess the impact of a public information campaign on reducing plastic waste pollution, specifically focusing on plastic bags, in the coastal area of the Greek Island of Syros. The study utilized a choice experiment approach to analyse how individual preferences for marine environmental protection were influenced by varying levels of environmental awareness post-campaign. Results indicated notable variations in preferences between campaign participants and non-participants. While participants exhibited higher economic values and willingness to pay (WTP) for safeguarding coastal/marine ecosystem services compared to non-participants, there was no significant contrast in their dedication to decreasing plastic bag usage. The study highlighted the campaign's influence on individual values and preferences, with participants showing increased WTP for initiatives targeting the mitigation of plastic waste pollution's impacts on marine ecosystems. Furthermore, the study found that the public information campaign had a positive impact on raising awareness about the importance of marine environmental protection and the need to reduce plastic waste pollution. Participants in the campaign were more likely to value and prioritize the preservation of coastal and marine ecosystems, as evidenced by their higher WTP for initiatives aimed at mitigating plastic waste pollution. This suggests that targeted public information campaigns can effectively influence individual behaviour and preferences towards more sustainable practices. The findings of this study have important implications for policymakers and environmental organizations seeking to address plastic waste pollution in coastal areas. By understanding the impact of public information campaigns on individual values and preferences, they can design more effective strategies to promote environmental conservation and reduce plastic pollution. Additionally, the study underscores the importance of ongoing education and

awareness-raising efforts in fostering a culture of environmental stewardship and sustainable living.

6) Veríssimo, Bianchessi, Arrivillaga, Cadiz, Mancao, and Green (2017) delve into the intricacies surrounding the evaluation of social marketing campaigns targeting sustainable local fisheries in the Philippines. Their study assesses the impact of three such campaigns utilizing a quasi-experimental BACI evaluation design, taking into account factors like marine-protected area (MPA) effectiveness, climate change, MPA size, and population. The paper underscores the critical necessity for robust impact evaluation methodologies to ascertain the causal effects of interventions, ensuring both accountability and knowledge advancement. It sheds light on the challenges encountered during the evaluation process, including the requirement for a systematic approach to site matching, potential biases in expert-led matching procedures, and the limited number of sites evaluated. While the study uncovers some evidence of impact in terms of threat reduction and perceived conservation outcomes, the consistency of results across all sites remains elusive. Moreover, it underscores the importance of leveraging independent data sources, tackling spillover effects, and broadening the scope beyond behaviour change and perceptions. The discussion within the document navigates the complexities inherent in evaluating the influence of social marketing campaigns on biodiversity conservation, emphasizing transparency, accountability, and continual learning in conservation endeavours. Providing valuable insights into the challenges and lessons gleaned from evaluating such campaigns, the study advocates for the adoption of more robust evaluation methods to gauge their efficacy effectively. It suggests potential enhancements such as a more systematic site matching process,

bias mitigation strategies, and the consideration of broader outcomes beyond self-reported indicators. Overall, the paper presents a comprehensive exploration of the experiences and hurdles encountered in evaluating social marketing campaigns directed at fostering human behaviour conducive to biodiversity conservation, advocating for a pragmatic, ethical, and efficient approach to impact evaluation.

7) Upmanyu and Thakur (2018) presents an evaluation of an awareness campaign on honeybee conservation in district Shimla, India. It serves as a relevant case study for understanding community-driven initiatives in this field. The study aimed to assess the effectiveness of the campaign in reaching different population groups, including women from the Mahila Mandal group, school students, and college students in rural areas. Through the use of statistical analysis techniques such as hypothesis testing and questionnaire-based evaluations, the researchers analysed feedback from these demographics and identified significant variations in response across institutions. Notably, women from the Mahila Mandal group and school students showed the most positive responses, indicating the success of the campaign within these groups. The document emphasizes the importance of community-led awareness initiatives, particularly in the absence of government-funded programs, and highlights the need for tailored educational efforts to promote honeybee conservation. By providing valuable insights into grassroots awareness campaigns, this study contributes to the understanding of the role of community engagement and targeted education in addressing the decline of honeybee populations. It also emphasizes the significance of considering diverse demographic groups in conservation messaging and underscores the need for customized approaches in awareness campaigns. Ultimately, this document

adds to the broader discourse on conservation efforts and the importance of community participation in environmental stewardship.

8) Kevin M. Green et al. (2019) presents a comprehensive review of 84 social marketing campaigns conducted by Rare and its partners across 18 countries between 2009 and 2012. These campaigns aimed to disrupt destructive activities and enhance global conservation outcomes by targeting human behaviours that contribute to biodiversity and habitat loss. To assess the impact of these campaigns, the researchers utilized standardized sociological questionnaires before and after the campaigns. This allowed them to evaluate changes in behavioural variables across different conservation contexts. Employing a meta-analytic approach, the authors extracted and validated data, estimated mean effect sizes, and employed path analysis to examine the relationships among variables in various models. The results of the study revealed significant increases in behavioural variables following the implementation of the campaigns. The full model accounted for 71% of the variation in behaviour change, highlighting the effectiveness of the interventions. These findings underscore the importance of integrating behavioural theory and social marketing principles into conservation programs to effectively address threats to biodiversity. The insights gained from this study are particularly valuable for practitioners involved in behaviour change campaigns. The research provides practical implications for designing interventions that can effectively tackle global conservation challenges. It emphasizes the significance of community knowledge, attitudes, and interpersonal communication in driving behaviour change in conservation efforts. In conclusion, this research highlights the potential of incorporating behavioural science into global conservation campaigns and emphasizes the effectiveness of social marketing in promoting behaviour change.

It underscores the importance of engaging communities to achieve conservation goals and offers a roadmap for developing successful behaviour change strategies in conservation initiatives.

9) Kidd et al. (2019) conducted an extensive analysis of the current landscape of research on conservation messaging. Their study aimed to consolidate and elucidate the existing body of literature on conservation messaging, evaluate the incorporation of fundamental elements of message design and theory from diverse disciplines, and pinpoint areas where further research is needed to offer crucial direction for the formulation and structuring of conservation messages. The authors systematically reviewed 89 pertinent papers in the scientific literature concerning conservation messaging. A significant portion of these studies were published in the last five years, indicating the burgeoning nature of conservation messaging as a research domain. The reviewed articles encompassed a wide array of subjects, ranging from general biodiversity and nature conservation concerns to species-specific conservation and natural resource management. The paper underscores several pivotal discoveries and research voids within the prevailing conservation messaging literature. It underscores the significance of anchoring studies in established theories pertinent to the research objective, such as behavioural decision-making theories, and underscores the necessity for strategic communication underpinned by research, planning, execution, and assessment phases. The review also brings to light the absence of audience segmentation in numerous conservation messaging studies, with only a third of the reviewed studies targeting a segmented audience. Audience segmentation is deemed a crucial element of effective communication, and the paper deliberates on the

significance of employing audience segmentation techniques to customize messages for distinct audience segments. Moreover, the study discloses that many conservation messaging studies neglect to evaluate the efficacy of their messages, underscoring the requirement for rigorous evaluation methodologies to gauge the influence of conservation messages on recipients. The paper also delves into the theories and methodologies employed in conservation messaging, encompassing framing, marketing, and the utilization of charismatic and engaging strategies.

10) Olmedo et al. (2020) conducted an extensive scoping review to explore the use of celebrity endorsements in environmental conservation campaigns and evaluate their effectiveness. Their research identified a total of 79 campaigns that utilized celebrity endorsements, with a significant number of these initiatives originating from Chinese literature. This highlights the importance of considering non-English sources to gain a comprehensive understanding of the subject. However, the review also revealed a discrepancy in how well these campaigns followed essential steps for successful celebrity-based interventions, as only 15 of them showed evidence of incorporating key components. The study stressed the significance of evidence-based practices, such as strategic celebrity selection, thorough audience research, and systematic message testing, to enhance the impact of celebrity endorsements in conservation marketing efforts. Additionally, the review identified various challenges and limitations in evaluating celebrity-endorsed campaigns, including the lack of robust evaluation frameworks and inadequate assessment methods. Methodologically, the research employed a meticulous approach, encompassing a broad definition of celebrity endorsement and environmental conservation campaigns across multiple languages and databases. The inclusion and exclusion criteria were clearly defined, and a team of 11

reviewers with expertise in different languages carefully screened the literature to ensure comprehensive coverage and systematic analysis. Despite the widespread use of celebrity endorsements in environmental campaigns, the review found limited empirical evidence supporting their effectiveness in achieving conservation goals, emphasizing the need for future endeavors to prioritize evidence-based approaches.

11) Olmedo et al. (2020) conducted a study that delves into the utilization and effectiveness of celebrity endorsement in environmental conservation campaigns. Through a comprehensive analysis, the research explores a wide range of campaigns that incorporate celebrity endorsements to advocate for environmental causes. Interestingly, the study identifies 79 campaigns that feature celebrity endorsements, with a particular emphasis on Chinese literature. This suggests that there may be a lack of relevant information in English-centric analyses. One crucial aspect highlighted in the study is the evaluation of evidence supporting the effectiveness of celebrity endorsements in environmental campaigns. Among the campaigns examined, only a small number demonstrated adherence to the necessary planning and implementation steps for successful celebrity-driven interventions. This emphasizes the significance of conducting comprehensive reviews across different linguistic domains and incorporating language-specific databases to ensure inclusivity in research findings. In terms of methodology, the scoping analysis adopts a broad definition of celebrity endorsement and environmental conservation campaigns, allowing for a thorough examination of the subject matter. The inclusion criteria are meticulously defined, guided by the Population, Intervention, Comparison, and Outcomes (PICO) framework,

which ensures rigor and clarity in the selection process. With a team consisting of 11 reviewers, the study employs a systematic approach to literature search and review, encompassing multiple languages to enhance inclusivity.

The study reveals that there Is Insufficient evidence to support the effectiveness of celebrity endorsements in environmental campaigns. Although numerous campaigns have been identified, only a small portion have achieved tangible success in meeting their objectives. This research highlights the importance of evidence-based reporting, careful selection of celebrities, thorough audience research, and the establishment of rigorous evaluation frameworks in order to maximize the impact of celebrity endorsements in conservation marketing. To summarize, this study offers valuable insights into the use of celebrity endorsements in environmental conservation campaigns. It emphasizes the necessity of employing rigorous methodologies, basing practices on evidence, and engaging in strategic planning to effectively harness the power of celebrity endorsements in advocating for environmental causes.

12) Meena et al. (2021) delve into the intricate dynamics of human attitudes and the various factors that influence coexistence with lions in the Greater Gir landscape of western India. The research, which took place between July 2016 and January 2017, specifically targeted individuals ranging from 15 to 82 years old. The study comprehensively examines a range of socio-demographic parameters, conflict experiences, management practices implemented by the Gujarat Forest Department, levels of knowledge, social awareness, and religious associations related to lions. The study's findings reveal a prevailing expression of positive and tolerant attitudes towards lions among the majority of respondents, despite the fact that lions cause more livestock depredation compared to leopards. Interestingly, the attitudes of respondents were

significantly influenced by factors such as age and awareness about lions. Younger individuals and those with a higher level of awareness tended to exhibit more positive outlooks. Additionally, community discussions and interventions carried out by the Gujarat Forest Department emerged as influential factors in shaping attitudes towards lions. The study also highlights the crucial role played by cultural aspects, including religious and historical influences, in shaping human attitudes towards wildlife.

The research methodology utilized In this study Involved conducting Interviews with participants in order to gather data. The researchers strategically targeted respondents by using opportunistic household approaches within village settings. The survey consisted of a variety of questions that were designed to provide a deeper understanding of the context of human-wildlife conflict, perceptions about lions and leopards, and factors that may influence tolerant attitudes. Ethical considerations were given careful attention, and informed verbal consent was obtained from each participant to ensure their voluntary participation. To analyse the data, several techniques were employed, including χ^2 contingency tables, ordinal response regression models, and mixed-effect models. These methods were used to examine the relationship between categorical variables and to model the association between reported attitudes towards lions and predictor variables. In summary, Meena et al.'s study provides valuable insights into the various factors that contribute to promoting tolerance and coexistence with lions in the Greater Gir landscape. The research highlights the importance of tailored conservation strategies, community engagement initiatives, awareness campaigns, and improved livestock management practices in fostering positive attitudes towards wildlife. These findings have significant implications for the development of evidence-based conservation policies that aim to mitigate human-wildlife conflict and promote sustainable long-term coexistence.

4) Chua, Tan, and Carrasco (2021) delve into the efficacy of species awareness days in advancing biodiversity conservation efforts. The research aimed to assess the influence of these awareness days on public engagement and conservation initiatives. Through an examination of Google Trends and Wikipedia page views related to 16 awareness days, the study revealed that certain species, such as pangolins, polar bears, turtles, and tigers, witnessed notable increases in information-seeking behavior, while others did not observe the same trend. The outcomes propose that resources dedicated to promoting awareness days could be more effectively utilized for lesser-known threatened species. Additionally, the study explored the impact of Twitter Interactions and identified a positive correlation between tweets containing a call to action message and the number of retweets, potentially enhancing engagement. Moreover, the research scrutinized the influence of awareness days on conservation fundraising, with some organizations reporting heightened donations during their respective awareness days.

   Furthermore, the study highlighted the potential role of curiosity as a motivator for seeking information, especially for unfamiliar species. It also proposed the necessity for future research to analyze search patterns while taking into account the country of origin of the searches and to explore the influence of Google Ads and website ranking performance on conservation fundraising during awareness days

CHAPTER 3

METHODOLOGY

3.1 Research design

In this study, a research design that utilizes both quantitative and qualitative approaches was employed. The quantitative component involved the analysis of survey data that was collected through a structured questionnaire. This questionnaire consisted of both close-ended and open-ended questions. On the other hand, the qualitative component focused on analysing the responses to the open-ended questions in the questionnaire.

The decision to use a mixed-methods approach in this study was based on its suitability for conducting a comprehensive evaluation of the effectiveness of the "Save the Goan Bull Frog" campaign. The quantitative data obtained from the survey provides numerical insights into the public's awareness, perceptions, and behaviours regarding the Goan Bullfrog and its conservation. On the other hand, the qualitative data offers a deeper contextual understanding and nuanced perspectives from the respondents.

By combining the strengths of both quantitative and qualitative methods, this study aims to provide a multi-dimensional assessment of the campaign's impact and identify areas for improvement or future interventions. The integration of these two data sources will allow the researcher to validate findings, develop a more holistic understanding of the research problem, and provide robust recommendations for enhancing the effectiveness of the Goan Bullfrog conservation efforts.

3.2 Sampling and Participants

The study utilized a purposive sampling strategy to select the participants for the survey. A total of 104 individuals from North Goa were included in the sample. The selection of participants aimed to capture a wide range of perspectives from various socio-demographic backgrounds. This helped to get various point of views of the society.

The age range of the respondents varied from 17 to 65 years, with an average age of 27.8 years. This diverse age distribution enables the examination of potential variations in awareness, attitudes, and behaviours towards Goan Bullfrog conservation based on age. The sample consisted of slightly more female respondents (58%) compared to male respondents (41.9%), which offers insights into gender-specific perceptions and involvement in conservation efforts. In terms of employment status, the sample comprised a significant proportion of students (46.6%), employed individuals (45.7%), and a small percentage of unemployed respondents (6%). This distribution reflects the diverse socio-economic backgrounds of the participants, which may influence their level of awareness, access to information, and ability to contribute to conservation activities. The average education level of the respondents was 15.9 years, indicating a relatively well-educated sample. This characteristic is particularly important as higher levels of education have been linked to increased environmental awareness and participation in conservation initiatives. The geographic distribution of the respondents encompassed a wide range of villages in North Goa, with Siolim being the most represented (37.5% of the sample). This extensive geographic coverage provides a more comprehensive understanding of the reach and effectiveness of the campaign across different communities in the region.

3.3 Data Collection

The structured questionnaire utilized for data collection involved the participation of 104 survey respondents. The questionnaire was circulated through social media platforms to the respondents. To effectively address the research objectives, the questionnaire was divided into four distinct sections, namely A, B, C, and D, each focusing on specific aspects.

Section A primarily concentrated on gathering socio-demographic information from the respondents. This encompassed details such as their name, age, gender, employment status, education level, residential area, and marital status. The purpose of this section was to acquire essential data that would aid in comprehending the characteristics of the sample population. Additionally, it aimed to explore potential connections between these factors and the respondents' awareness, attitudes, and behaviors towards the conservation of the Goan Bullfrog.

Section B was designed to assess the respondents' awareness, identification, and observation of various species, including the Goan Bullfrog, Indian Bison (Gaur), Olive Ridley Turtles, moths, and wolves. The objective of this section was to gauge the participants' familiarity with the local flora and fauna, as well as their direct experiences with the Goan Bullfrog and its natural habitats.

Section C focused on evaluating the respondents' awareness and perception of conservation efforts, specifically pertaining to the Goan Bullfrog. It encompassed inquiries regarding the respondents' knowledge of ongoing conservation initiatives, their perception of the importance of conservation, and their willingness to contribute to conservation activities. Section D delved into the respondents' involvement in educational programs and campaigns related to Goan Bullfrog conservation. Furthermore, it explored their beliefs and attitudes

towards the effectiveness of current conservation efforts and the roles played by different stakeholders, such as government agencies, NGOs, and local communities, in these initiatives.

To capture both quantitative and qualitative data, the questionnaire employed a combination of multiple-choice, Likert-scale, and open-ended questions. The survey was administered through a combination of online and in-person methods to ensure a diverse representation of the target population.

3.4 Data analysis

The structured questionnaire yielded quantitative data, which was subjected to analysis employing a variety of statistical methods. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to present a summary of the socio-demographic profiles of the participants and their answers to the survey questions.

To support the quantitative analysis, Microsoft Excel and Google Sheets were also used for tasks such as data management, basic calculations, and the generation of data visualizations like charts and graphs to aid in interpreting the results.

T test was carried out on r studio to compare the identification ability of the respondents towards different endangered species. R studio was used to run multiple regression .

3.5 Ethical Considerations

In order to safeguard the rights of the participants and maintain the integrity of the research process, the study strictly adhered to ethical guidelines. Prior to collecting any data, the researcher ensured that all survey respondents and interview participants provided informed consent. The informed consent form presented to the participants contained comprehensive

information regarding the study's purpose, the voluntary nature of their involvement, and the steps taken to guarantee the confidentiality and anonymity of their responses. Participants were explicitly informed that they had the freedom to withdraw from the study at any point without having to provide a justification. Furthermore, it was emphasized that their decision to withdraw would not have any negative consequences on their relationship with the researcher or the institution.

CHAPTER 4

ANALYSIS AND CONCLUSION

4. ANALYSIS

The total number of responses collected from samples is 104 from diverse socio demographic characteristics. The questionnaire aimed at collecting data about the awareness level of the dangers to the habitat of Goan bull frog. Along with this species the questionnaire also focused on assessing respondents' knowledge about various other endangered species and if they are aware about their conservation status.

Before beginning with the questionnaire respondents were asked about their consent to participate in the survey ensuring their anonymity. the questionnaire was divided into four categories i.e. A,B,C,D.

- A consisting of questions regarding the socio **demographic characteristics** of the respondents including their name, age, education, marital status, employment status, residential address.

- the B category consisted of questions regarding **Species Identification and Observation** This category encompasses questions about the respondents' experiences with observing and identifying various species, including Goan Bullfrogs, Indian Bison (Gaur), Olive Ridley Turtles, moths, and wolves.

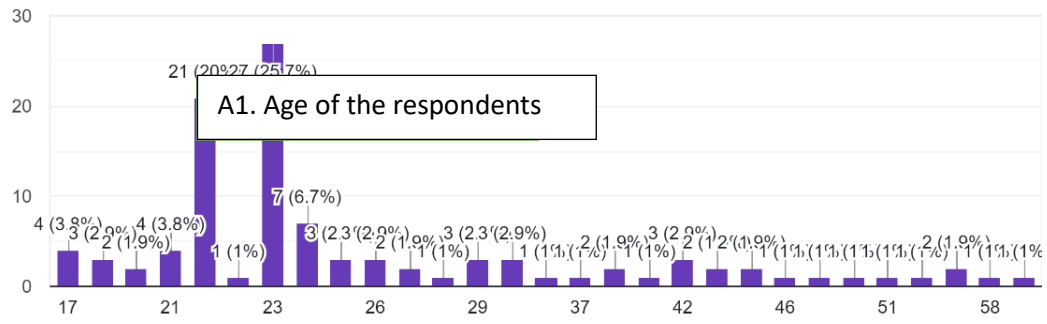
- the C category consisted questions that helped assess **Awareness and Perception of Conservation Efforts** and focuses on the respondents' awareness of conservation initiatives, their perception of the importance of conservation efforts for Goan

Bullfrogs and other species, and their willingness to contribute to conservation activities

SECTION A

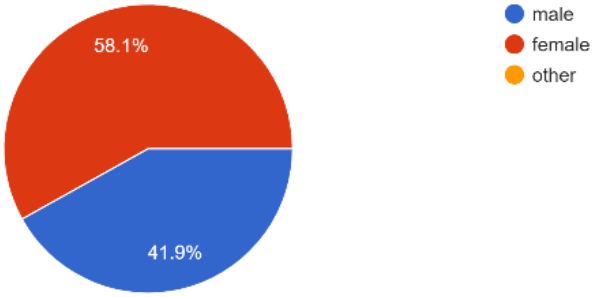
A total of 104 respondents were surveyed. looking at the demographic characteristics the age distribution ranges from 17 to 65 years. Majority of respondents which is 47 respondent's fall within the range of 22-23 years which is around 50% of the total respondents.

The mean age is 27.8 years and the youngest respondent is 17 years old and the oldest respondent is 65 years old. This reflects a diverse age range among respondents, with a notable concentration of individuals in their early twenties.



58% respondents are females while 41.9 % respondents are males. this gender distribution among the respondents, indicating that the slight majority of respondents are female while the remaining are male This gives an insight into the gender composition of the sample population, which may be relevant for understanding gender-specific perceptions, attitudes, an behaviours related to the conservation of the Goan bullfrog.

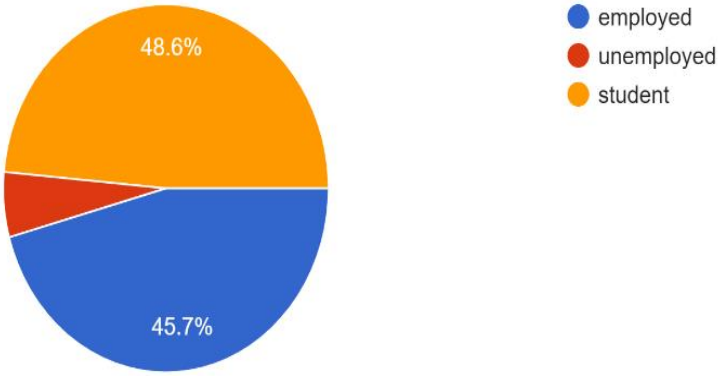
A2. Gender of the respondents



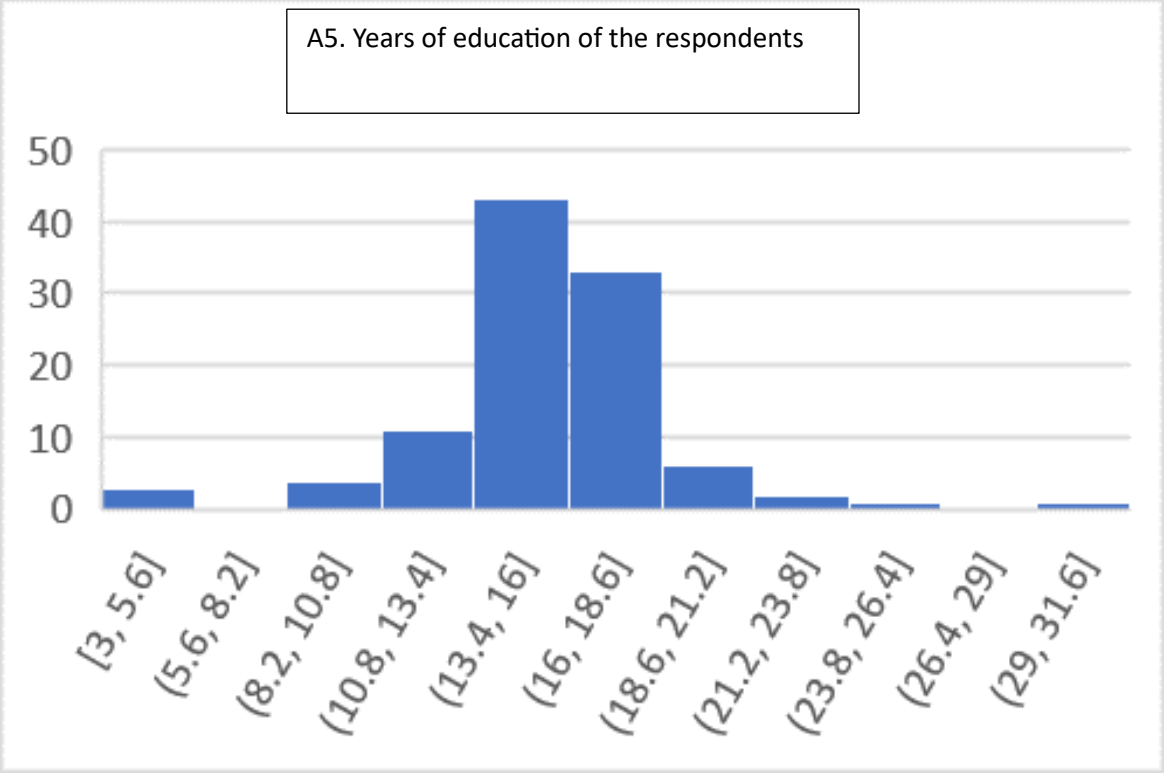
looking at the employment status of the respondents a great portion of 46.6% of the respondents are students while 45.7 people are employed and around 6% are unemployed.

A3. Employment status of the respondents

105 responses



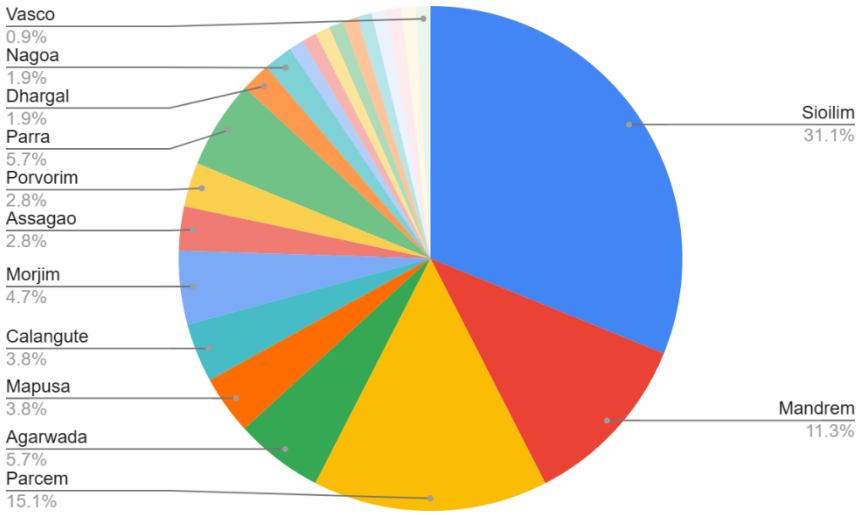
The average education years of the respondents is 15.9 which respresents a relatively educated sample group. The highest educated respondent is 31 years while the lowest is 4 years .



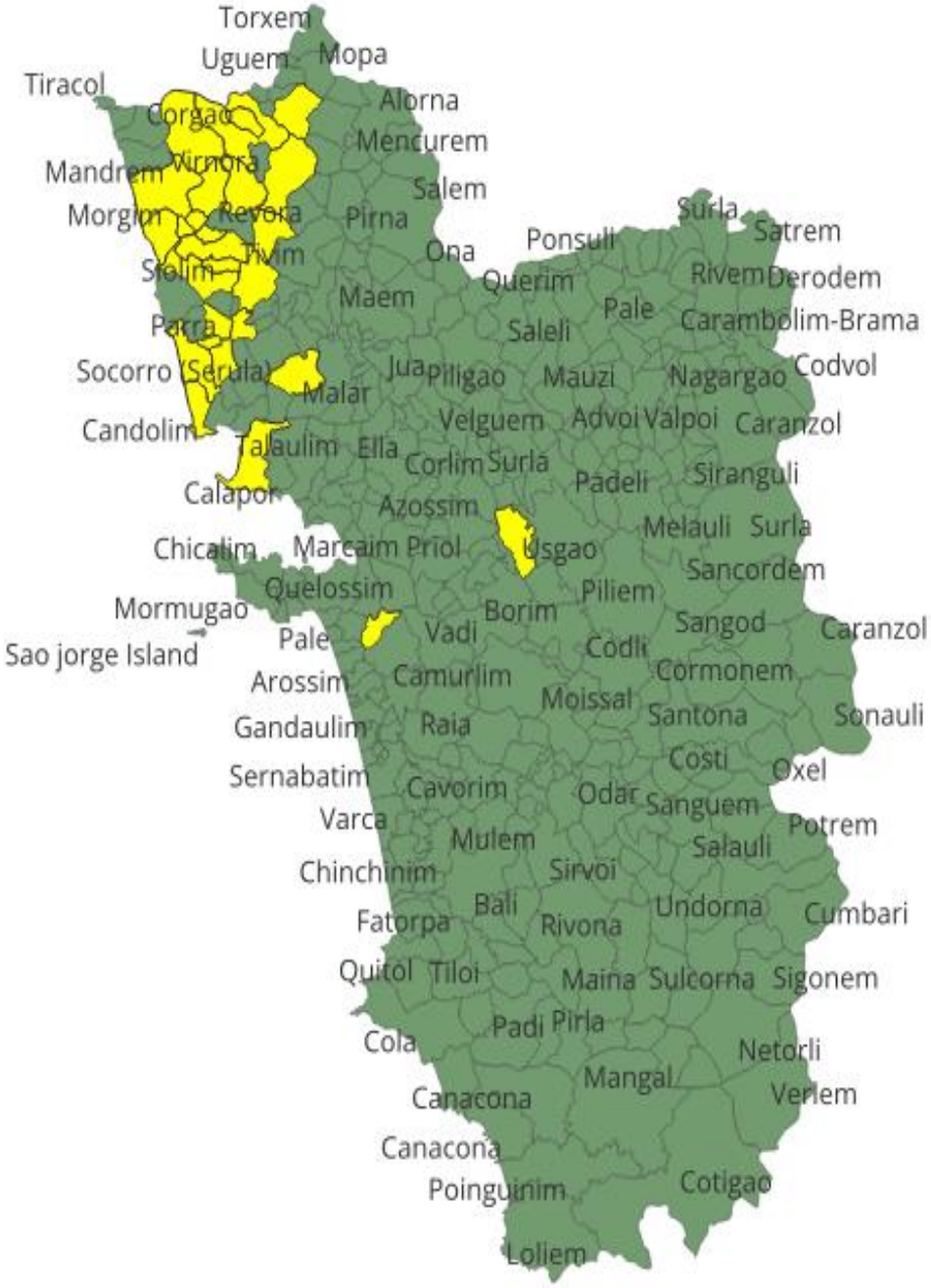
Looking at the residential areas of the respondents a large portion of the samples are located in siolim village which was the area where the campaigns were conducted. Despite the prominence of Siolim, there is a diverse range of villages represented among the respondents, with Parcem, Mandrem, Parra, and Calangute being the next most common residences. This indicates a diverse geographic distribution of the sample population across different villages within the region. Distribution is as follows Siolim: 39 Parcem: 27, Mandrem: 10 , Parra: 7 , Calangute: 6 , Porvorim: 4, Agarwada: 4, Morjim: 6 , Assagao: 3 , Mapusa: 3 , Dhargal: 2 , Nagoa: 2 Santa Cruz: 1 Guirim: 1 Korgao: 1 Netravali: 1 Shiroda: 1 , Vasco: 1, , Nuvem:1 , Colvale: 1 Panjim: 1 Kandolim: 1 Porvorim,: 1 Which represents a diverse geographically

distributed samples. The highlighted parts on the map are the locations of the respondents on the village level map of goa. The study mostly focused on the residents of north goa.

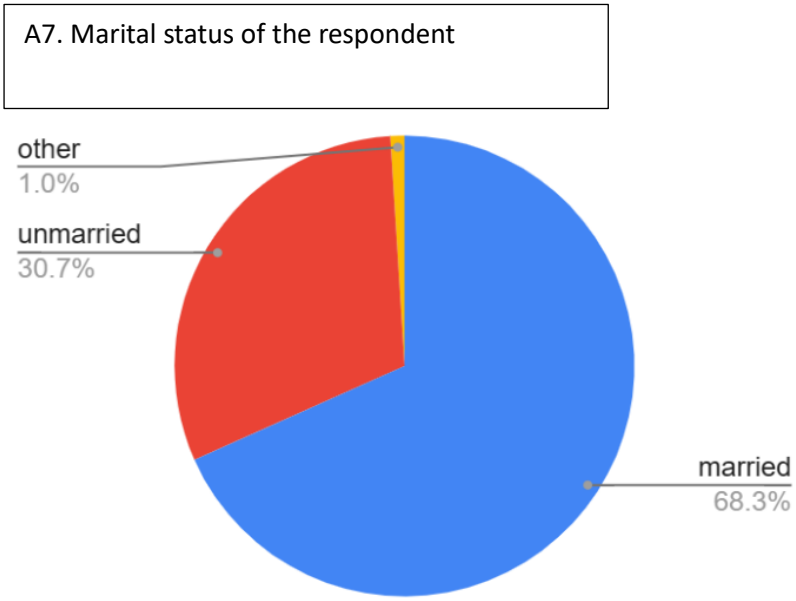
A6. Percentage distribution of respondents residential areas



1 . respondents villages



And lastly a question was asked on the marital status of the respondent which indicated a majority of more than 60% of the samples as unmarried and some were married which a very small section of the respondents said other.



All This information gives us an insight into the demographic composition of the sample population, which may be relevant for analysing differences in awareness, attitudes, and behaviours related to the conservation of the Goan bullfrog

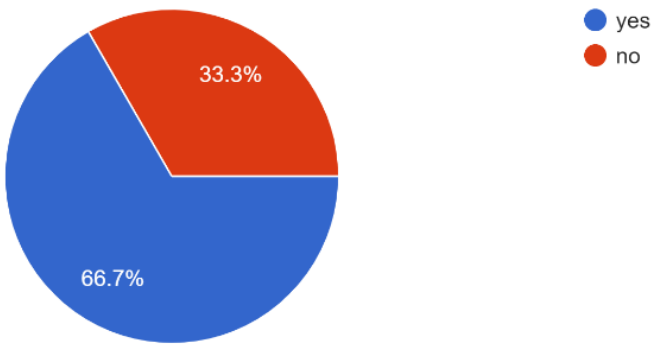
Section B

Section B focused on areas regarding **Species Identification and Observation**. This category included questions about the respondents' experiences with observing and identifying various species, including Goan Bullfrogs, Indian Bison (Gaur), Olive Ridley Turtles, moths, and wolves.

The section began with asking the respondents if they have ever seen live Goan Bullfrogs in their natural habitat.

A majority of respondents have said that they have seen live bullfrogs. And a small number of the population said that they haven't seen. The fact that 65% of respondents have seen live Goan Bullfrogs indicates that they are likely to have a greater awareness and familiarity with the species compared to those who haven't. the differences in experiences regarding the sighting of live Goan Bullfrogs may result in diverse perspectives and attitudes towards their conservation. Those who have seen the species may have a stronger emotional connection and sense of urgency towards protecting it, while others may rely on alternative sources of information or have less personal investment in conservation efforts.

B1. Whether the respondent has seen live bull frog

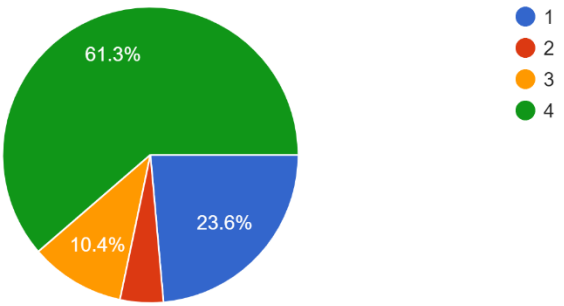


Following to this question respondents were asked 4 questions where they were given 4 different pictures of different species and asked to find the correct one. Analysing the percentage of correct responses for each species can indicate the level of recognition and familiarity among the respondents. This information can help prioritize conservation efforts and educational campaigns for species that are less well-known. Correctly identifying endangered species may also indicate a higher level of concern or interest in conservation among respondents.

The first one indicated to Identify the Indian bison (gaur) from four different but similar species picture. A total of 62% were able to identify the gaur correctly. .

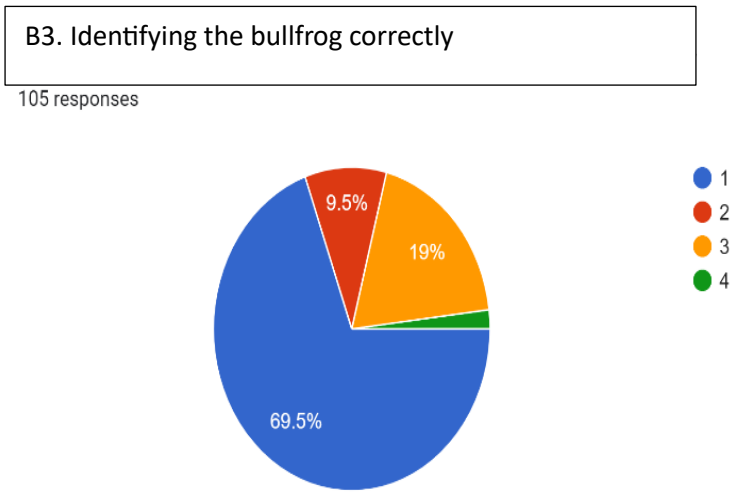
(source: https://www.shutterstock.com/)

B2. Identifying the gaur correctly



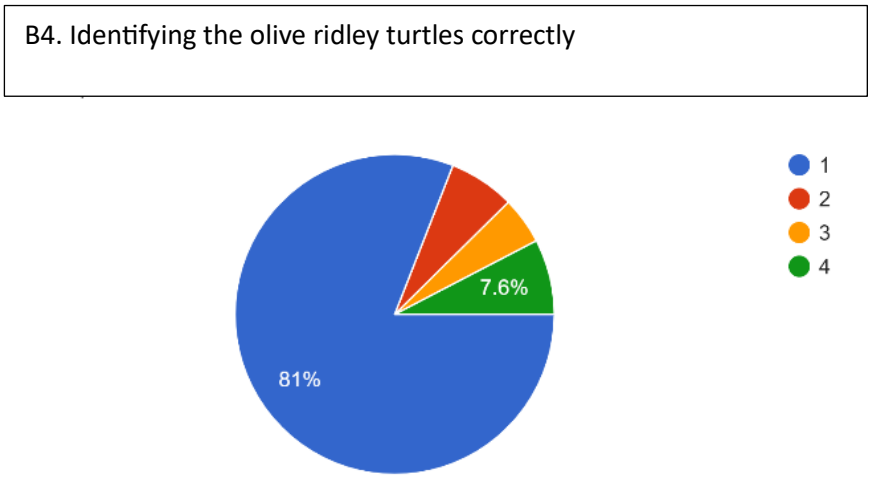
Similarly the next question followed up was to identify the Goan bull frog and a majority of 69.5 % were able to identify the Goan bull frog correctly. This gives an insight into the awareness level and identification ability of the respondents about the Goan bull frog.

(source: shutterstock, national geographic, Missouri department of conservation, the leaflet.com)

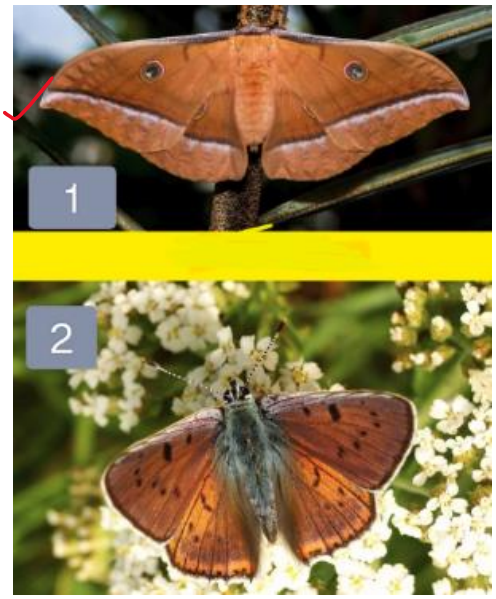


The next species were the olive ridley turtles which is another endangered species. Here also a majority of the respondents i.e 81% of the respondents were able to identify the species correctly while a smaller proportion of 19% failed to identify the species.

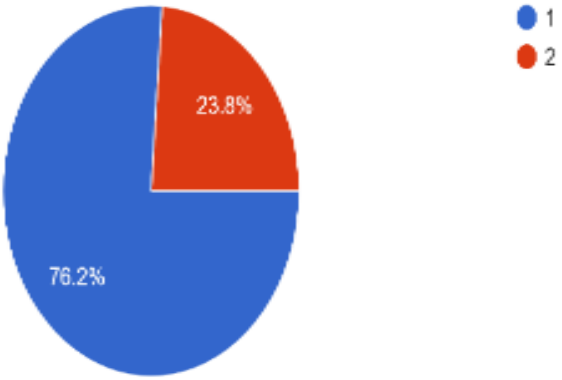
(source: pureMuskoka.com)



Following up a question was asked to identify the moth from two pictures one being the moth and the other being a butterfly and a huge part of around 76% of the respondents were able to identify it correctly while the other 23 failed to Identify correctly.



B5. Identifying the moth correctly

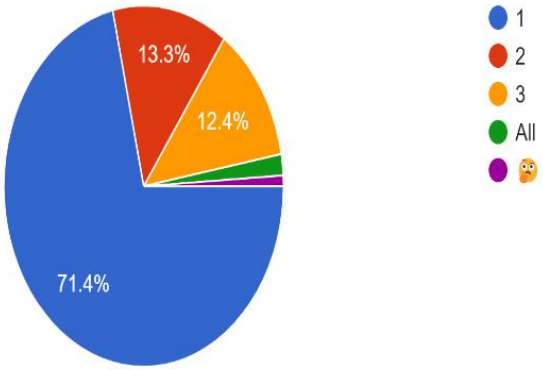


(source: Brightside.com)

N lastly respondents were asked to identify the wolf from four different but similar pictures.

(source: pinterest)

B6. Identifying the wolf correctly



species	No. of Correct Resp	No. of Incorrect	Percentage of Correct Responses	Percentage of Incorrect Responses
Bullfrog	73	32	69.00%	31.00%
Gaur	65	40	61.90%	38.10%
Olive Ridley	85	20	80.00%	20.00%
Moth	80	25	76.20%	23.80%
Wolf	75	30	71.40%	28.60%

Table 4.1. comparing t value for comparing species identification ability

Species Comparison	P-value	T-value	Interpretation
Goan bullfrog vs. Wolf	0.6151	0.5036	No statistically significant difference in identification ability ($p > 0.05$)
Goan bullfrog vs. Moth	0.3291	0.9783	No statistically significant difference in identification ability ($p > 0.05$)
Goan bullfrog vs. Olive Ridley Turtles	0.0705	1.8185	Borderline statistically significant difference in identification ability ($p \approx 0.05$)
Goan bullfrog vs. Gaur	0.2067	1.2667	No statistically significant difference in identification ability ($p > 0.05$)

Goan bullfrog vs. Wolf: The p-value of 0.6151 and t-value of 0.5036 suggest that there is no statistically significant difference in identification ability between the Goan bullfrog and the wolf species ($p > 0.05$). This indicates that respondents have similar levels of awareness and ability to identify both species.

Goan bullfrog vs. Moth: The p-value of 0.3291 and t-value of 0.9783 suggest that there is no statistically significant difference in identification ability between the Goan bullfrog and the moth species ($p > 0.05$). This implies that respondents have similar levels of awareness and ability to identify both species.

Goan bullfrog vs. Olive Ridley Turtles: The p-value of 0.0705 and t-value of 1.8185 indicate a borderline statistically significant difference in identification ability between the Goan

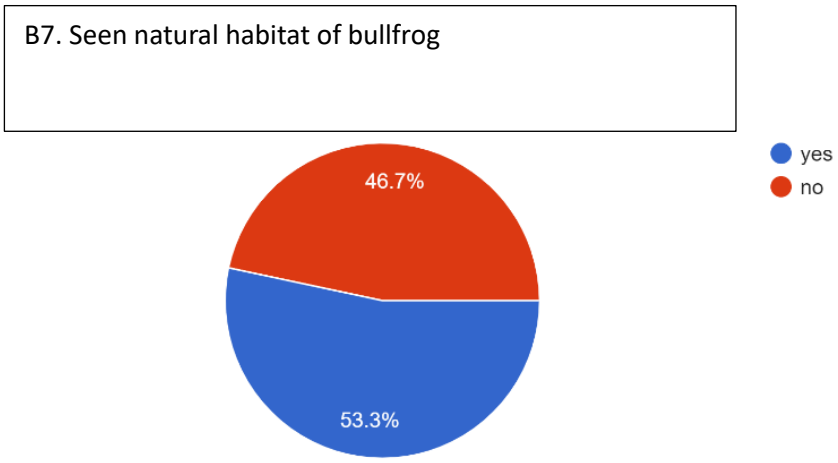
bullfrog and the Olive Ridley Turtles ($p = 0.0705$, close to 0.05). This suggests that respondents may have slightly better awareness and ability to identify the Olive Ridley Turtles compared to the Goan bullfrog.

Goan bullfrog vs. Gaur: The p-value of 0.2067 and t-value of 1.2667 suggest that there is no statistically significant difference in identification ability between the Goan bullfrog and the Gaur species ($p > 0.05$).

In conclusion the identification ability is slightly higher for the olive ridley turtles. One reason might be that This species offlate has got a considerable attention towards conservation of its habitat.

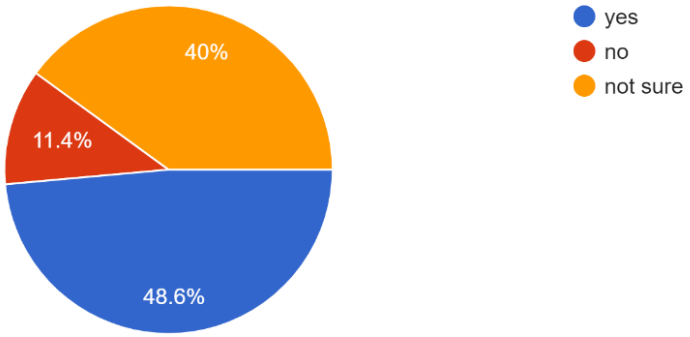
Following up the data on whether respondents have ever seen natural habitats of Goan Bullfrogs were collected and The data indicates that 47 % of respondents have not seen the natural habitats of Goan Bullfrogs. This suggests a significant portion of the sample population lacks direct experience or observation of the bullfrogs in their native environment. However, 53% of respondents have seen the natural habitats of Goan Bullfrogs. This means that a relevant proportion of the respondents has had the opportunity to observe the bullfrogs

in their native habitats.



The question on whether the respondents have witnessed any changes in the population of Goan Bullfrogs in their area over the past few years 51 respondents i.e 48.6 % respondents said that they have faced changes in the population of Goan bull frog. Where as 40% said that they were not sure which clearly portrayes their lack of awareness about the dangers to this species while a minimal number stated that they haven't witnessed any changes in their population.

B8. witness changes in bullfrog population



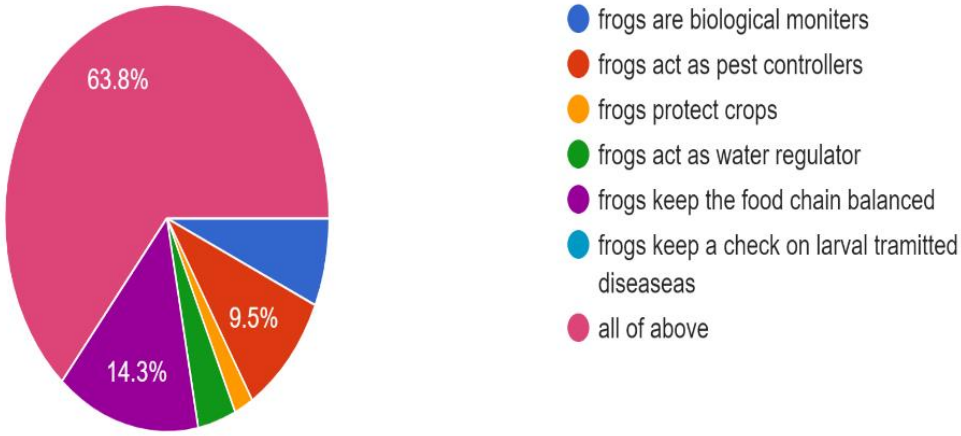
Respondents were asked if they were aware about any conservation efforts taken towards these species. Here 51 % respondents said no while 49 % said yes. The fact that almost half of the respondents were unaware about the initiatives clearly states that the awareness campaigns did not reach to a vast majority. And to some extent failed to create awareness among the local communities.

To assess the level of awareness about benefits of the Goan bull frog a question asked was " what benefits do you think the frogs provide to the ecosystem" and provided with options 1)frogs are biological moniters.2) frogs act as pest controllers. 3) frogs protect crops. 4) frogs act as water regulator. 5) frogs keep the food chain balanced. 6)frogs keep a check on larval transmitted diseases. 7)all of above.

67 respondents out of 105 said that frogs provide all this benefits to the ecosystem which also an insight about the level of education people have about frogs. Majority of them are aware about all the benefits that frogs provide. While rest others gave responses as frogs keep the food chain balanced , they protect the crops, frogs act as pest controllers. This indicates an

understanding of frogs' position as both predators and prey in the food web, contributing to ecosystem stability. Overall, the responses reflacted a recognition of frogs' multifaceted ecological significance, emphasizing the importance of conserving these amphibians for maintaining ecosystem balance and biodiversity.

B10. Benefits of bullfrog

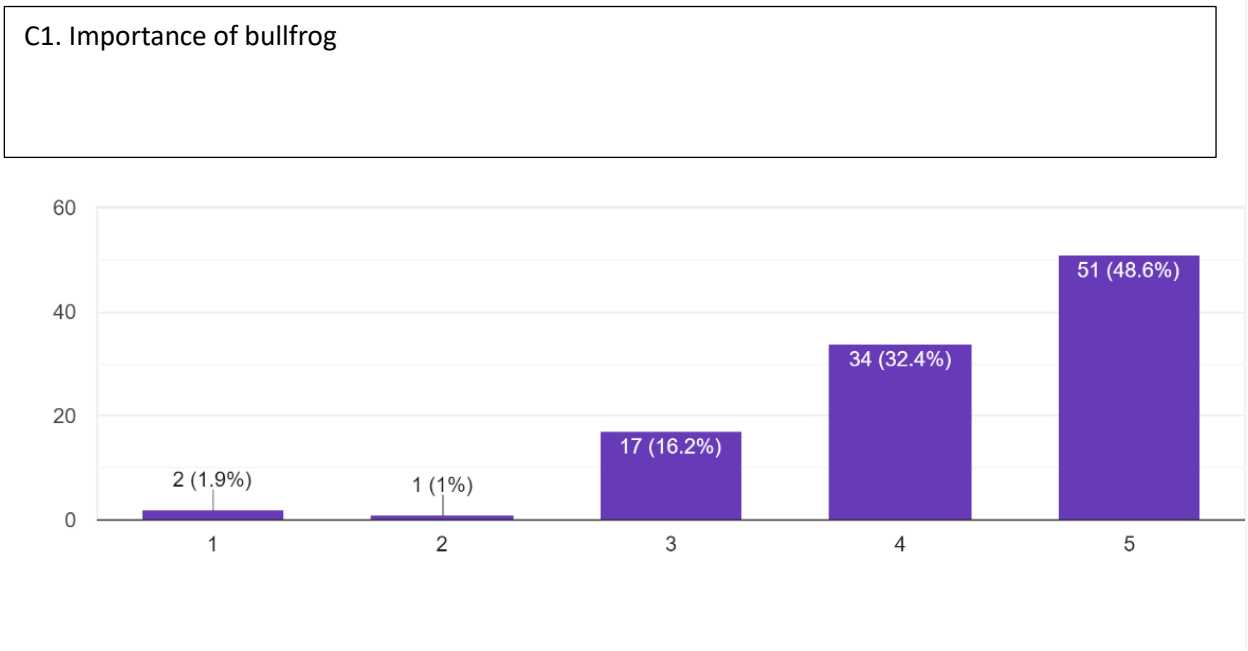


Section C

the following questions focused on assessing Awareness and Perception of Conservation Efforts. They aimed to understand respondents' awareness of conservation initiatives, their perception of the importance of conservation efforts for Goan Bullfrogs and other species, and their willingness to contribute to conservation activities.

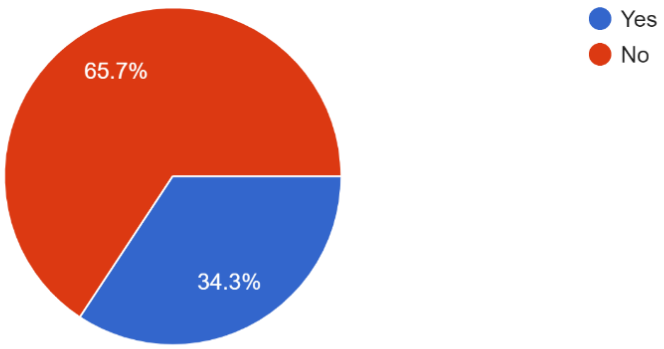
Respondents were asked to rate the importance of conserving the Goan bullfrog on a scale of 5. About half rated it as 5, indicating it is very important. The other half rated it as 3 or 4,

showing it is important or somewhat important. Only a few respondents considered it least important. The majority feeling it is important to conserve the Goan bullfrog shows their overall support for conservation efforts. This underscores the necessity for ongoing conservation measures to safeguard goan bull frog



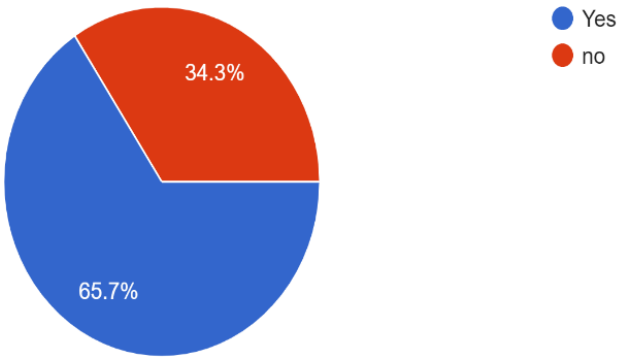
The majority of respondents (66%) indicated that they are not aware of current conservation initiatives for Goan Bullfrogs in their area. This indicates a significant lack of knowledge or information regarding ongoing efforts to conserve this species. However, a notable portion of respondents (34%) reported being aware of current conservation initiatives for Goan Bullfrogs. While this percentage is relatively low compared to those unaware, it still represents a segment of the population that is informed about conservation efforts.

C2. Awareness about the bullfrog conservation initiatives



Following up a question was asked about their willingness to contribute to the conservation of Goan Bullfrogs. Understanding willingness among respondents can help in the development of targeted conservation strategies that cater to the specific needs, interests, and motivations of the population A majority of 66 % of the respondents said yes , they would be willing to contribute to the conservation efforts while 34% respondents showed unwillingness towards their contribution in conservation efforts.

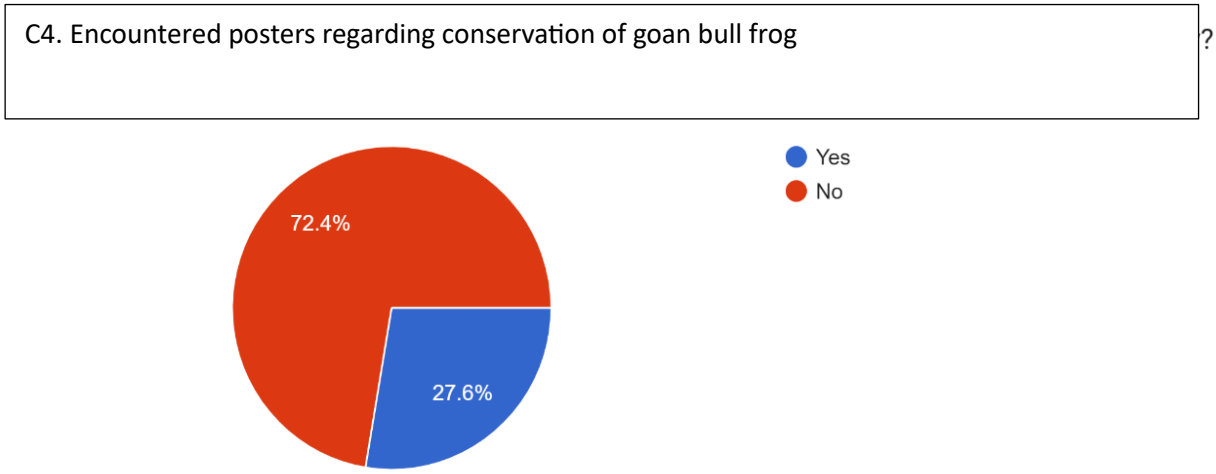
C3. Willingness to contribute in any way towards bullfrog conservation



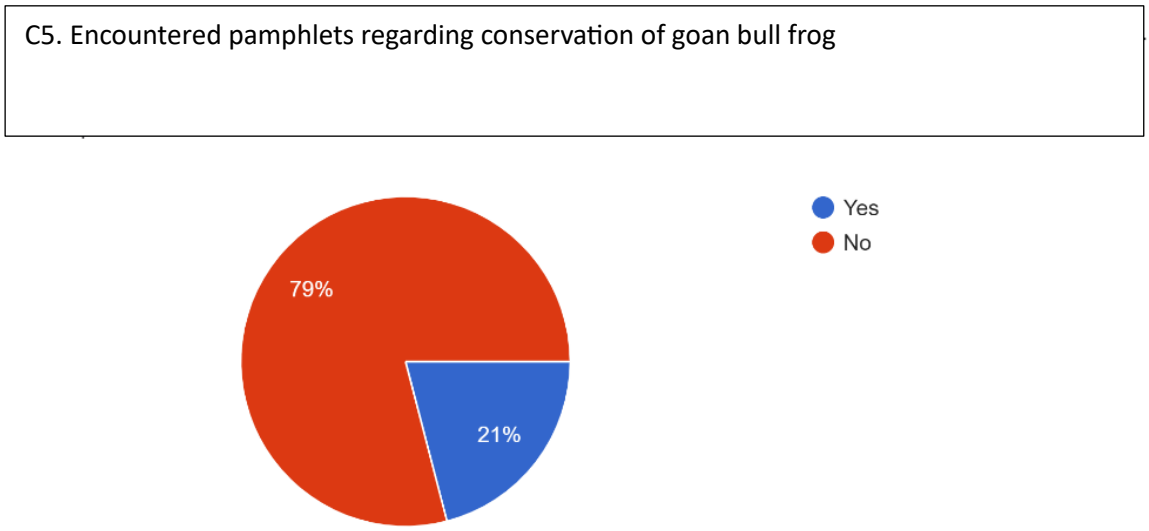
Followed up question was if yes then in what way? This was an open ended response where individuals express a willingness to protect Goan Bullfrogs directly, possibly by creating safe habitats or preventing harm to the species. Many respondents mentioned spreading awareness as a way to contribute. This includes educating others about the importance of Goan Bullfrogs, their role in the ecosystem, and the need for conservation efforts. Some respondents expressed a desire to support conservation initiatives financially or through other means. This could involve contributing to conservation organizations or participating in conservation projects. Several responses mentioned advocacy, education, and outreach as ways to contribute. This includes activities like giving talks, organizing awareness camps, creating educational materials, and engaging with communities. A few respondents mentioned adopting environmentally friendly practices, such as avoiding chemical fertilizers and protecting wetlands, as ways to indirectly contribute to bullfrog conservation.

the respondents were asked about the various platforms where they have encountered any knowledge about this campaigns. gathering this information would help in understanding

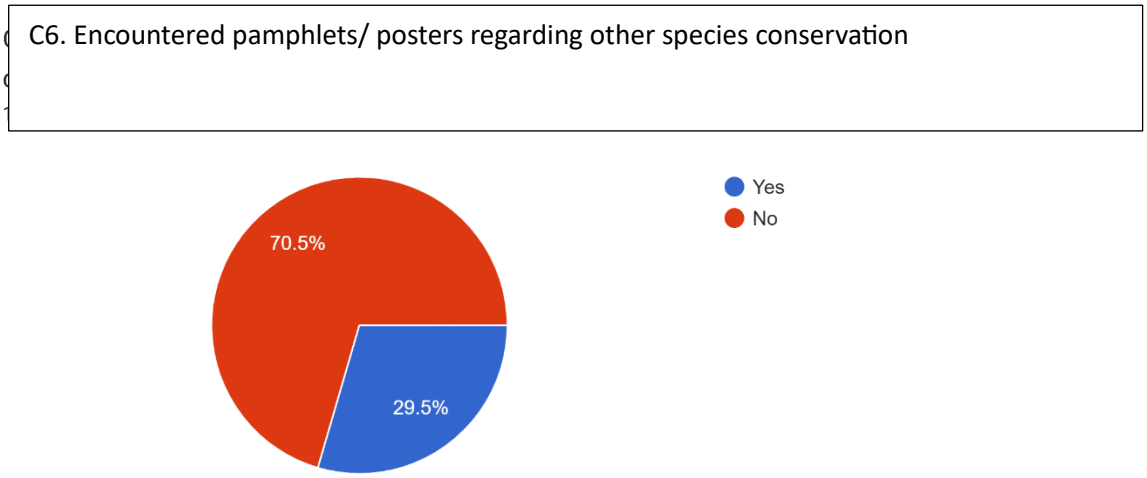
how effectively the initiatives taken by the ngos have actually reached the people and if Were they successful in creating awareness among the general public. The majority of respondents i.e 72 % reported that they have not encountered any posters about Goan Bullfrog conservation in their community. The relatively low percentage of respondents i.e 28% have encountered such posters.



Similarly a question was asked if they encountered any pamphlets about goan bull frog conservation and here also majority of the respondents said no.



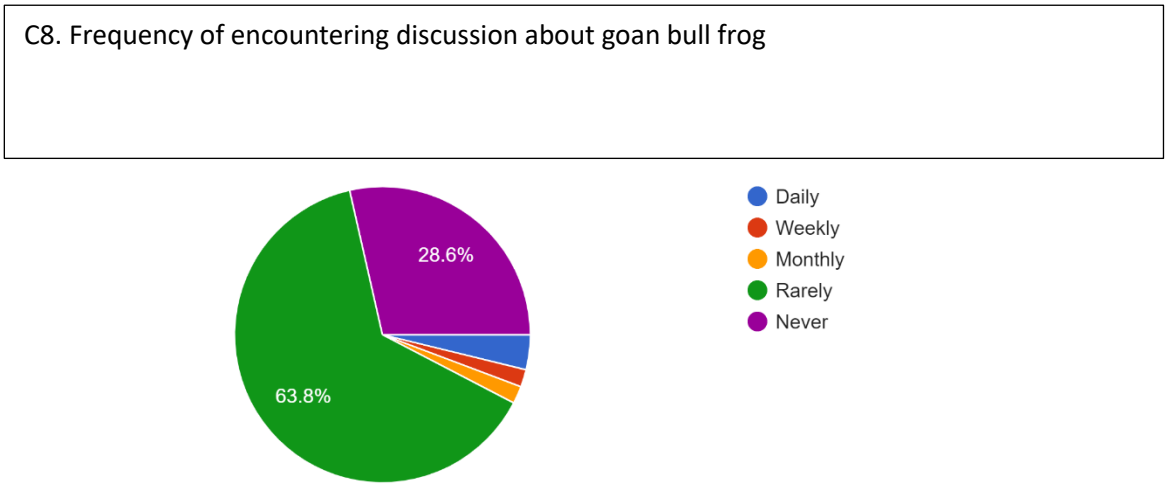
following up a question was asked if they had encountered any poster or pamplets about any other endangered species. To understand the wider scenario of the different conservation campaigns so that we get a clearer picture about the comparison of the save the goan bullfrog campaign with different other campaigns of different species. 70% of the respondents said no while the remaining 30% said that they have encountered.



this 30% were asked to mention which ones, Bullfrog, Tiger, Wild Boar, Turtle, Monitor Lizard. , Elephant, Deer, Rabbit, Reptiles, were some of their responses . Some respondents mentioned encountering materials related to multiple species, such as bullfrogs, tigers, elephants, and deer. One respondent mentioned encountering conservation materials through social media. One respondent mentioned creating materials related to bullfrog conservation.

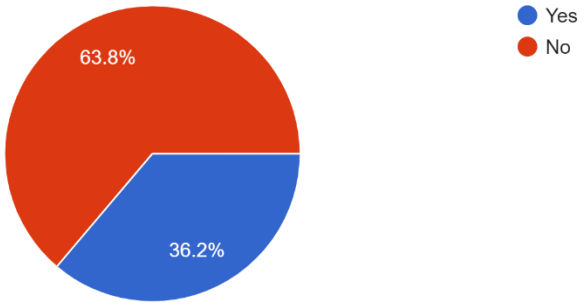
“How frequently do you encounter information or discussions about Goan Bullfrog conservation in your community or local media?” was the next question here Many (30%) respondents indicated that they never encounter information or discussions about Goan Bullfrog conservation in their community or local media. This suggests a significant lack of awareness or visibility of conservation efforts related to the species. A majority of 68% of

respondents reported encountering information or discussions about Goan Bullfrog conservation rarely. This indicates that while some exposure to conservation efforts does exist, it is infrequent and possibly insufficient for meaningful engagement or awareness. A few respondents mentioned encountering information or discussions about Goan Bullfrog conservation on a more regular basis, ranging from daily to monthly. This suggests that there may be pockets of active engagement or communication about conservation efforts, albeit less common.



In order to understand the level of awareness about the laws and regulation for conservation of Goan bull frog a question was asked if they are aware or not. A significant portion of respondents I.e 63% indicated that they are not aware of any local regulations or laws specifically aimed at protecting Goan Bullfrogs and their habitats. This suggests a lack of familiarity with existing legal frameworks related to bullfrog conservation. This lack of knowledge might lead to more poaching of this species and threatening their existence . on the other hand 36%respondents reported being aware of local regulations or laws for bullfrog protection, indicating that there might be some level of knowledge or understanding among certain individuals.

C9. Awareness about laws and regulations about bullfrog protection



On the other hand other a similar question was asked to understand the scenario for olive ridley turtles, so that there is an insight about whether the respondents are just not aware about Goan bull frog or is it for other species as well. Surprisingly majority of 63 % of respondents were aware about the local regulation for protecting the olive ridley turtles. While some respondents indicated awareness, there were also participants who stated that they are not aware of any local regulations or laws concerning olive ridley turtles and their habitats. This clearly shows that the campaigns lacked creating awareness about local regulation among people for Goan bull frog but the awareness level about turtles were higher

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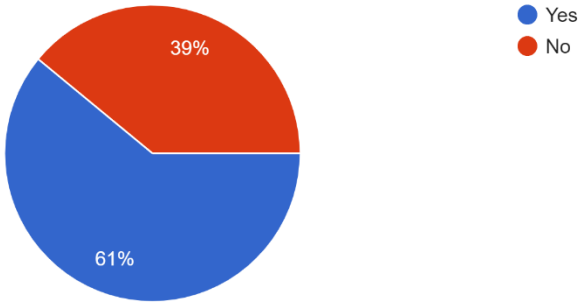
C10. Awareness about laws and regulations about olive ridley turtles protection



4.2 t value for comparing conservation awareness of different species

T value	3.556
p- value	0.000467

t-test was conducted to assess whether there is a significant difference in conservation knowledge between two species, namely the bullfrog and olive ridley turtle The obtained p-value of approximately 0.000467 suggests strong evidence against the null hypothesis. In simpler terms, this indicates that there is a statistically significant difference in conservation knowledge between bullfrog and turtles.

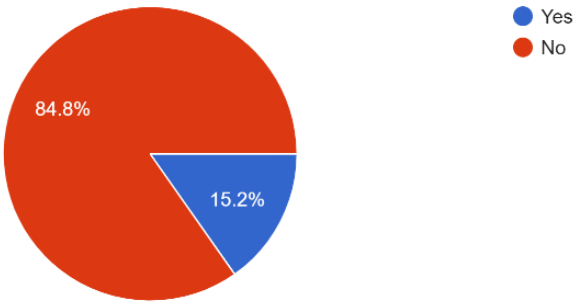
The calculated t-value of approximately 3.556 represents the size of the difference in conservation knowledge between bullfrog and turtles, relative to the variability in the data. A larger absolute t-value indicates a greater difference in awareness between the two species. In this case, the relatively high t-value further supports the conclusion that there is a substantial difference in conservation knowledge between bullfrog and turtles.

Section D

And the last D section consisted of questions regarding **Engagement in Conservation Activities** . This category focused on to the respondent's participation in educational programs, campaigns, and other initiatives related to Goan Bullfrog conservation, as well as their beliefs about the effectiveness of conservation efforts and the roles of government agencies, NGOs, and local communities in conservation endeavours.

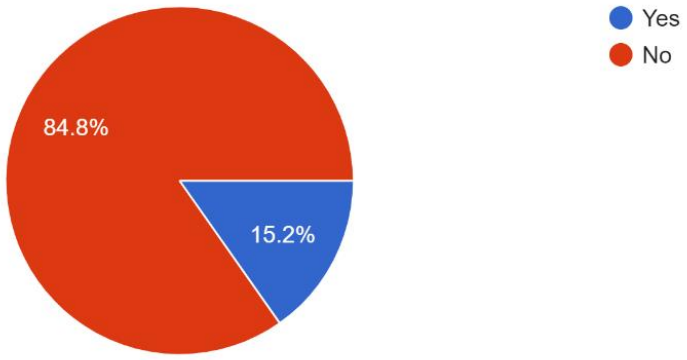
This section began with asking the participants if they have participated in any educational programs related to Goan Bullfrog conservation in any way, where 17 respondents said that they have participated in the educational programs. while the remaining said that they never participated. this suggests a lack of exposure to educational initiatives focused on raising awareness about the importance of conserving Goan Bullfrogs and their habitats.

D1. Participation in educational program related to bullfrog

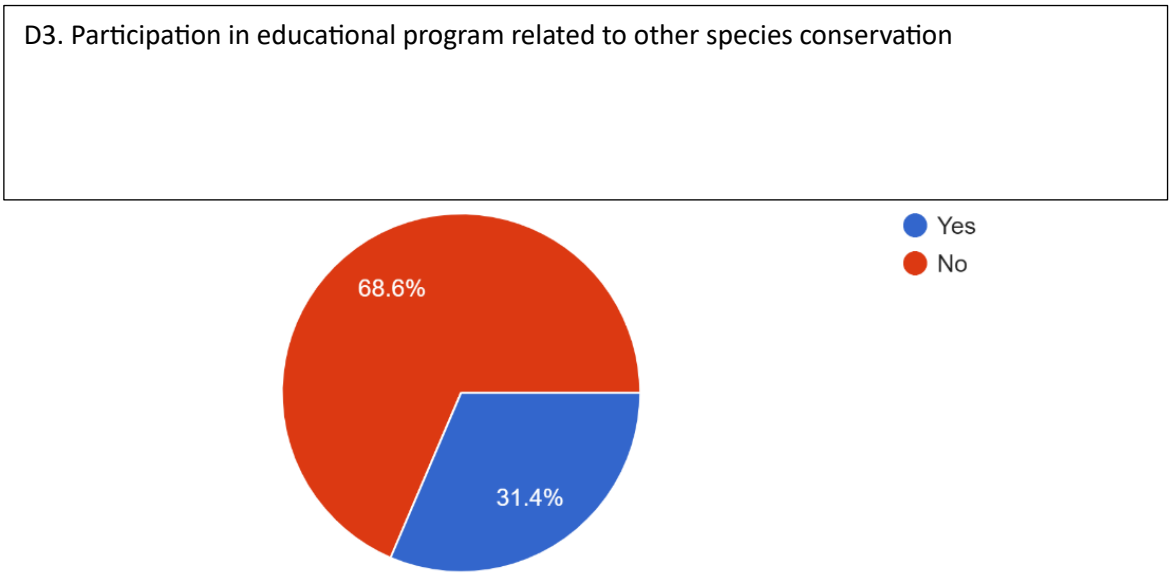


The respondents were also asked about their participation in the campaign on save the Goan bull frog here as well 89% of the respondents said no while remaining 11% said yes. The results suggest a need for increased awareness and outreach efforts to inform community members about ongoing campaigns and opportunities for participation in Goan Bullfrog conservation efforts.

D2. Participation in educational program related to bullfrog

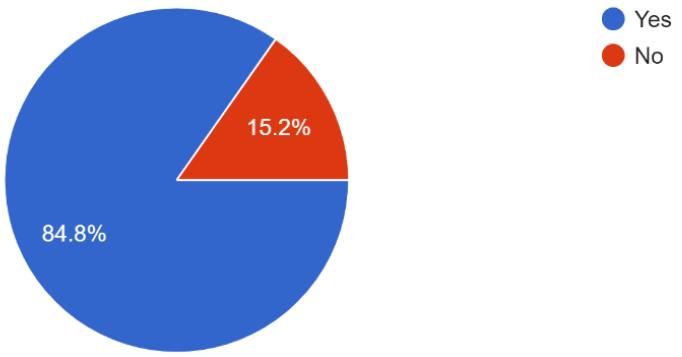


Some information was also gathered about whether they have participated in any other such campaigns to save the endangered species. this helped gather information about respondents interest and concern for species conservation at a broader level. here a slightly higher number of 31% of the respondents said yes they have participated in such campaigns while still a majority said no. This shows a level of interest or involvement in supporting broader conservation efforts aimed at protecting various different species as compared to targeting just one single species. This might mean that respondents are not exposed to Goan bull frog conservation initiative but are exposed to other endangered species and their conservation status.



The respondents were asked if they believe that raising public awareness about Goan Bullfrog conservation can lead to positive changes in their conservation status. Following up with another question about the similar belief for all the other endangered species in general. This responses gave an idea about the perception of the people regarding the idea of creating awareness to be inculcated as a part of conservation initiative. The overwhelming majority of 88.6% respondents believe that raising public awareness about Goan Bullfrog conservation can lead to positive changes in their conservation status.

D4. Belief that awareness will bring positive outcomes

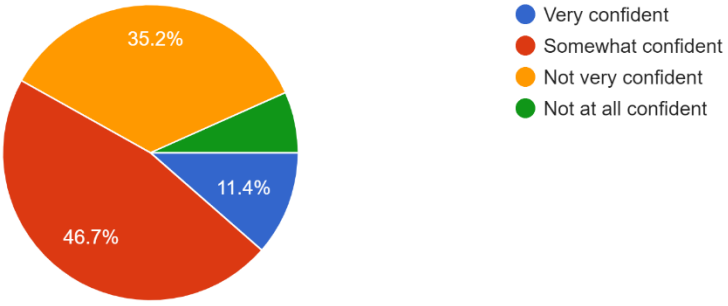


This indicates a strong belief in the efficacy of awareness-raising efforts. A small minority of 13% expressed skepticism regarding the effectiveness of awareness-raising initiatives. The high proportion of respondents expressing confidence in the power of public awareness suggests that investing in awareness-raising campaigns and educational initiatives could be a promising strategy for promoting Goan Bullfrog conservation.

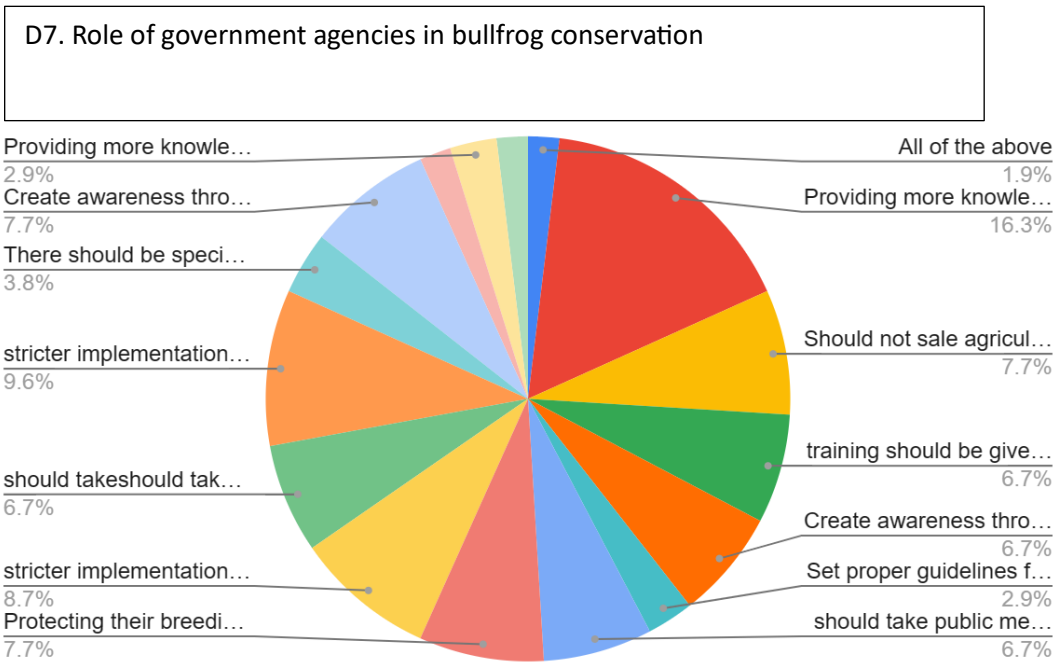
The respondents were asked as to how confident are they in the effectiveness of current conservation initiatives for Goan Bullfrogs in your area to get an idea about what views do people hold about the success of the conservation initiatives. There were a mixture of responses , where a majority of them said that they are somewhat confident , while 35% of the respondents said that they are not very confident at the same time 11% said that they are very confident about the effectiveness on the contrary nearly 7% of the respondents said that they are not at all confident. While a notable portion of respondents express confidence in current conservation initiatives for Goan Bullfrogs, there is room for improvement, as a significant number indicate varying degrees of doubt. Ensuring transparency and actively

involving the community in conservation efforts may help address doubts and increase support.

D6.confidence in current conservation initiative

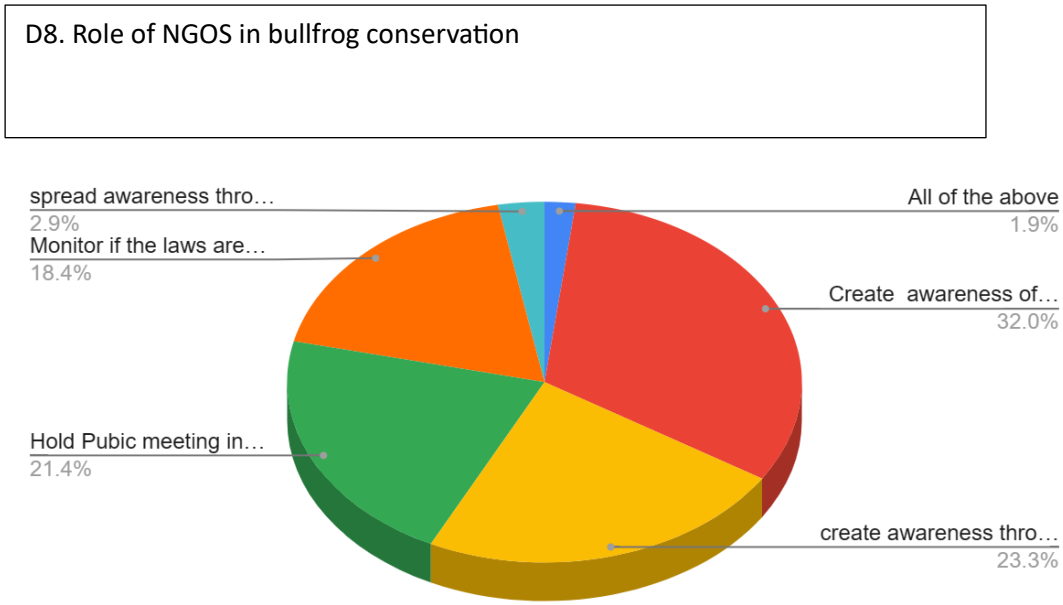


Following up the respondents were asked a series of question on what role do the think ngos, stakeholders , local communities should play to save this species from getting extinct. This questions helped to gain an in depth knowledge about what are the different contributions one can make on their part so save this amphibian.. the respondents responses for government agencies were as follows Respondents expect various actions from government agencies, including enforcement of stricter rules, educational initiatives, protection of habitats, and community engagement activities. Many respondents stress the importance of government-led awareness campaigns to educate the public about Goan Bullfrog conservation. Suggestions include setting guidelines, prohibiting certain activities like selling agricultural fields, and establishing special committees for oversight. The responses highlight the community's expectation for proactive involvement from government agencies in conservation efforts, indicating a desire for tangible steps to protect Goan Bullfrogs.

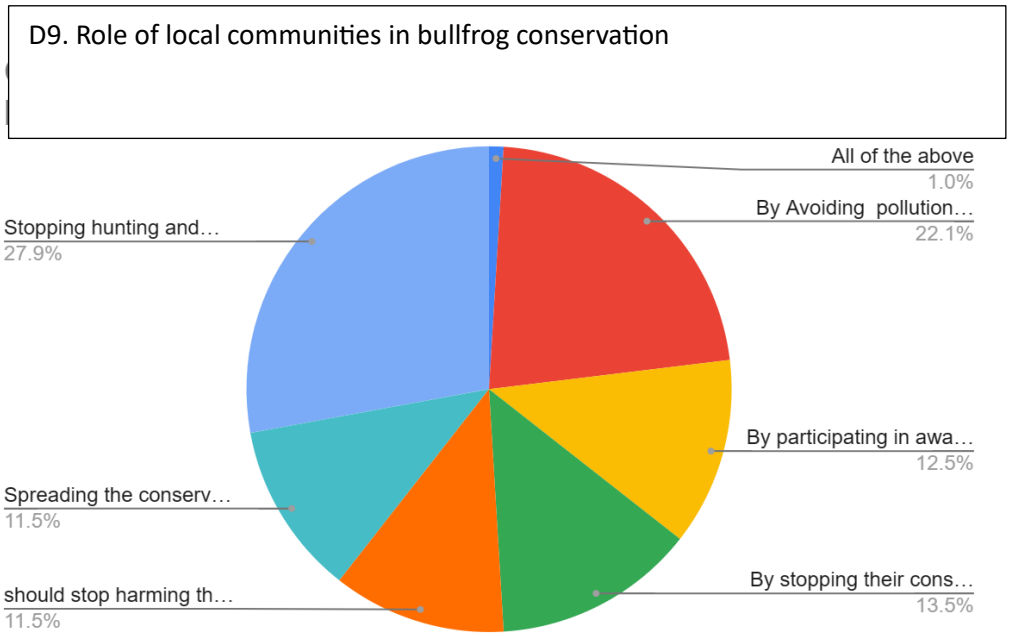


For the efforts on the side of the NGOSstated the following responses ; The majority of respondents emphasize the importance of NGOs in creating awareness through various channels such as posters, pamphlets, street plays, and social media campaigns. Holding public meetings at the village level is seen as crucial for engaging communities and promoting conservation efforts. Some respondents highlight the role of NGOs in advocating for stricter implementation of conservation laws and monitoring their effectiveness. Creating awareness among different age groups is considered essential for ensuring a broad

understanding of the importance of Goan Bullfrog conservation.

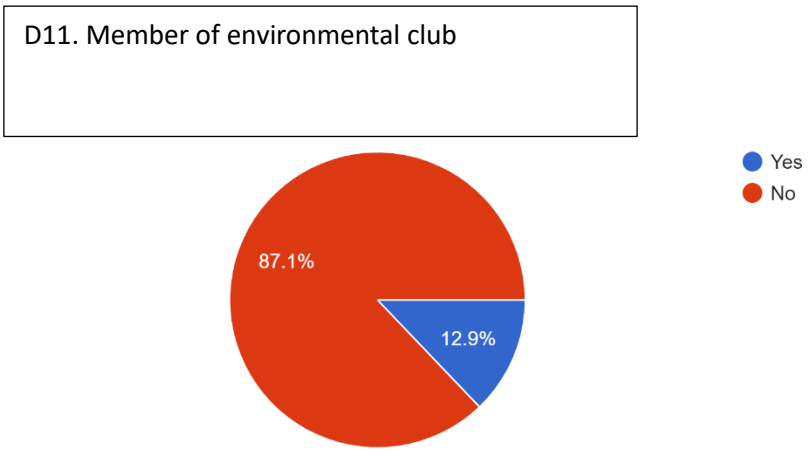


There has to be some efforts on the side of the community members which includes certain roles. Respondents felt the importance of local communities in conserving Goan Bullfrogs by avoiding pollution and the destruction of their natural habitat. Spreading the conservation message within the community and participating in awareness programs are seen as crucial. Several respondents highlight the need for behavioural changes within the community, such as stopping the consumption of Goan Bullfrogs and refraining from harming them. Local communities are expected to play a role in stopping hunting and poaching activities that threaten the survival of Goan Bullfrog.

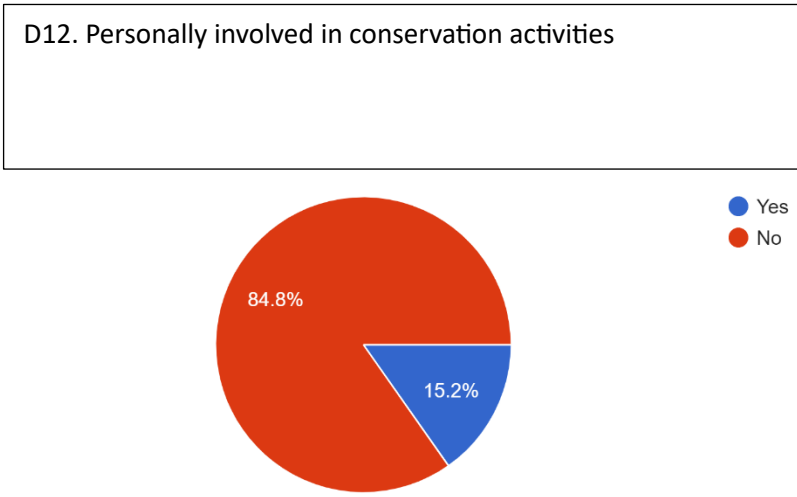


Respondents were also asked about their perception on what factors do they feel would encourage more efforts on the side of the people towards the conservation of goan bull frog. To get an idea about the ways to get more people participate in this campaign . 62 responses emphasized the importance of raising awareness about Goan Bullfrog conservation through various means such as discussions, creating videos, awareness programs, pamphlets, skits, campaigns, social media, news media, meetings, presentations, rallies, talks, and education at schools. responses suggested encouraging community involvement through meetings, presentations, involvement of local committees or panchayats, and creating awareness at the local level. Some responses proposed providing incentives, paying people for participating, or enforcing conservation measures through compulsion at the Panchayat level.

And at the respondents were asked if they are a member of any environmental club ? this helped to understand the how perspectives of the members of environment clubs differed from general public. 13% of the total respondents said that they are a member of environment club



and the followed up question was to find out if they are personally involved in any activities aimed at conserving local wildlife habitat here also around 16% of the total respondents said yes. The remaining weren't involved in any such activities. Respondents who were personally involved in such activities had a stronger concern for different species and their extinction.



The multiple linear regression model was developed using r studio to investigate the factors influencing an individual's willingness to contribute towards the conservation of the Goan bullfrog (C3.willingnesstocontribute)

The predictor variables included in the model are:

C1.perceivedimportanceofbullfrog: This variable represents an individual's perception of the importance of the Goan bullfrog species, which could potentially influence their willingness to contribute to its conservation efforts.

C4.exposuretocampaign; this variable includes information on whether the respondent was exposed to conservation campaigns or awareness programs related to the Goan bullfrog,

C9.awarenessofconservationlaws: This variable assesses wether the individual is aware about o existing conservation laws and regulations pertaining to the protection of the Goan bullfrog, D11memberofenvironmentclub: This variable indicates whether an individual is a member of an environmental club or organization, as membership in such groups could potentially influence their willingness to contribute towards conservation efforts.

D6.confidence: this variable includes respondents confidence in the current conservation initiative.

The model is essential in understanding the factors that drive individuals' willingness to contribute to the conservation of the Goan bullfrog, an endangered species facing a range of threats, including habitat loss, pollution, and illegal hunting. By identifying the significant predictors, conservation efforts can be tailored and targeted more effectively, ultimately enhancing the chances of preserving this unique amphibian species.

Model 1

Variable	Estimate	Std. Error	t value	p value
(Intercept)	0.60381	0.24191	2.496	0.01423
C1.perceivedimportanceofbullfrog	0.11129	0.05112	2.177	0.03187
C4.exposuretocampaign	0.27654	0.10082	2.743	0.00724
C9.awarenessofconservationlaws	0.01099	0.10380	0.106	0.91591
D11memberofenvironmentclub	0.01671	0.15886	0.105	0.91646
D6.confidence	0.06035	0.08120	0.743	0.45913

Residual standard error: 0.4561 on 98 degrees of freedom

Multiple R-squared: 0.1338

Adjusted R-squared: 0.08965

F-statistic: 3.029 on 5 and 98 DF,

p-value: 0.01385

interpretation

the statistical analysis revealed that the overall model was significant ($F(5, 98) = 3.029$, $p = 0.01385$), indicating that at least one predictor variable had a significant impact on the willingness to contribute to the conservation of the Goan bullfrog. Among the predictor variables, the perceived importance of the bullfrog (C1.perceivedimportanceofbullfrog) and

exposure to conservation campaigns (C4.exposuretocampaign) were identified as significant positive predictors of willingness to contribute. In particular, an increase of one unit in the perceived importance of the Goan bullfrog led to a 0.11129 unit increase in willingness to contribute towards its conservation, with all other variables held constant ($\beta = 0.11129$, $p = 0.03187$). This suggests that individuals who value the Goan bullfrog are more inclined to support its conservation efforts. Likewise, a one-unit rise in exposure to conservation campaigns resulted in a 0.27654 unit increase in willingness to contribute, with all other variables constant ($\beta = 0.27654$, $p = 0.00724$). This indicates the potential effectiveness of conservation campaigns in fostering support for the conservation of the Goan bullfrog. However, factors such as awareness of conservation laws (C9.awarenessofconservationlaws), membership in environmental clubs (D11memberofenvironmentclub), and confidence levels (D6.confidence) did not show a significant influence on willingness to contribute in this particular model. The model accounted for 13.38% of the variance in willingness to contribute ($R^2 = 0.1338$, adjusted $R^2 = 0.08965$), implying that there may be other unaccounted factors influencing an individual's willingness to support the conservation of the Goan bullfrog.

Model 2

This model the factors that affect people's perception of the importance of bullfrogs. We take into account factors such as education, exposure to campaigns promoting amphibian conserv ation, and different aspects of environmental awareness. The model analyses how these varia bles impact on individuals' perception of the significance of bullfrogs. By studying these relationships, we can gain a better understanding of public opinion and potentially develop m ore focused conservation strategies.

Model 2

Variable	Estimate	Std. Error	t value	p value
(Intercept)	1.863664	0.912103	2.043	0.04383
C4.exposuretocampaign	0.179483	0.190000	0.945	0.34726
A5.Education	0.030110	0.024373	1.235	0.21977
C9.awarenessofconservationlaws	0.039207	0.204695	0.192	0.84852
D11memberofenvironmentclub	0.292887	0.311688	0.940	0.34979
D6.confidence	0.020212	0.160517	0.126	0.90006
B1.seenbullfrog	0.076659	0.193302	0.397	0.69258
B8.witnesschanges	0.001185	0.138367	0.009	0.99319
B9.awarenessofconservation	0.549472	0.178867	3.072	0.00278

Residual standard error: 0.8537 on 94 degrees of freedom

Multiple R-squared: 0.1588

Adjusted R-squared: 0.08724 F-statistic: 2.219 on 8 and 94 DF,

p-value: 0.03264

interpretation

The statistical analysis reveals a significant positive relationship between awareness of conser vation efforts and the perceived importance of bullfrogs. Individuals who are more aware of c onservation efforts tend to attribute greater importance to bullfrogs. The coefficient of 0.5494 72 indicates a moderate positive impact. The low p-value of 0.00278, below the standard sign ificance level of 0.05, provides strong evidence that this association is not random.

Regarding other variables, exposure to the campaign shows a positive coefficient of 0.179483 , suggesting a potential increase in perceived importance. However, the p-value of 0.34726 is not significant, indicating that the effect may not be present. Similarly, education level displa

ys a positive coefficient of 0.030110, but the p-value of 0.21977 does not support statistical si gnificance.

The model also considers additional variables related to environmental awareness and person al experience. While these variables show some trends in their coefficients, their p-values are all above 0.05, indicating a lack of statistical significance in this analysis. Nonetheless, these variables could be crucial for future studies with larger datasets or different populations.

The R-squared value of 0.1588 suggests that the model explains approximately 15.88% of the variance in perceived importance. The adjusted R-squared value of 0.08724 is a more reliable measure, especially considering the number of variables included in the analysis.

Conclusion

The assessment of the "Save the Goan Bull Frog" campaign has yielded valuable insights into the public's awareness, perceptions, and involvement in the preservation of this endangered amphibian species in the North Goa region. The socio-demographic characteristics of the 104 participants revealed a diverse sample, encompassing various age groups, genders, employment statuses, educational backgrounds, and geographic locations. This diversity plays a crucial role in comprehending the nuanced perspectives and behaviours that could influence the community's connection with Goan Bullfrog conservation endeavours. The findings pertaining to species identification and observation shed light on the differing levels of familiarity and direct encounters that the respondents had with the Goan Bullfrog and other local flora and fauna. Although a majority of the participants reported having witnessed live Goan Bullfrogs in their natural habitats and were able to accurately identify the species, a significant portion lacked this direct exposure and recognition. This contrast in personal experiences with the Goan Bullfrog may contribute to disparities in the community's appreciation for the species and its conservation requirements.

The evaluation of the participants' understanding and attitudes towards conservation endeavors unveiled a mix of promising prospects and significant obstacles. A large portion of the surveyed individuals acknowledged the significance of Goan Bullfrog conservation, with half of them ranking it as "very important" on a 5-point scale. This favorable outlook towards safeguarding the species implies a solid base of backing that conservation groups can leverage. Nonetheless, the research also brought to light a troubling lack of awareness among the respondents concerning the ongoing "Save the Goan Bull Frog" campaign and other conservation projects aimed at the species. A majority of the participants indicated that they were uninformed about any present initiatives to protect the Goan Bullfrog in their vicinity. This disparity between the community's overall support for conservation and their familiarity with the specific programs underscores the necessity for more efficient communication and outreach tactics.

The investigation into the respondents' inclination to contribute to the preservation endeavors of the Goan Bullfrog yielded an optimistic discovery, as approximately two-thirds of the participants expressed their eagerness to engage in various ways. These ways include raising awareness, supporting conservation organizations, and adopting eco-friendly practices. This positive sentiment serves as a valuable resource that conservation organizations can utilize to enhance community involvement and cultivate enduring backing for the safeguarding of the Goan Bullfrog. The analysis of the respondents' exposure to information and materials pertaining to the conservation of other endangered species, such as the Olive Ridley Turtle, indicates that the local community possesses a broader understanding of biodiversity conservation efforts, even if their specific knowledge regarding the "Save the Goan Bull Frog" campaign is limited. This wider familiarity with conservation initiatives targeting different species presents an opportunity for mutual influence, whereby the visibility and

significance of the Goan Bullfrog campaign can be amplified by capitalizing on the community's existing engagement with conservation endeavors

The results pertaining to the respondents' involvement in educational programs, campaigns, and other conservation-related activities highlighted notable deficiencies in direct community engagement. A small percentage of the participants indicated their participation in projects aimed at the preservation of the Goan Bullfrog or other endangered species. This lack of active involvement implies that the local community may not have been adequately encouraged or provided with opportunities to engage in practical conservation efforts, thereby hindering their ability to cultivate a stronger sense of responsibility and dedication towards safeguarding the Goan Bullfrog.

The respondents' perceptions regarding the effectiveness of current conservation initiatives for the Goan Bullfrog were diverse, indicating a significant level of doubt or uncertainty among the sample. This suggests that there is a need for improvement in the design, implementation, and transparency of the conservation efforts. Additionally, it is crucial to align these initiatives with the expectations and priorities of the community in order to achieve better outcomes. The study also revealed that different stakeholders, such as government agencies, NGOs, and local communities, have a shared understanding of the importance of a collaborative and multifaceted approach to Goan Bullfrog conservation. The community's expectations encompassed various aspects, including stricter enforcement of regulations, habitat protection, awareness campaigns, and community-driven initiatives.

By integrating the findings from different components of the study, several key considerations emerge for enhancing the effectiveness of the "Save the Goan Bull Frog" campaign and strengthening the overall conservation of this endangered amphibian species.

1**. Enhance Communication and Outreach Strategies**:

Enhancing communication and outreach strategies involves improving the visibility and reach of the "Save the Goan Bull Frog" campaign through various communication channels. These channels include local media, social media platforms, community events, and targeted educational initiatives. It is crucial to ensure that the local community is consistently updated on the conservation status of the Goan Bullfrog, ongoing initiatives, and opportunities for engagement. Additionally, leveraging the community's existing familiarity with conservation efforts aimed at other species can help amplify the visibility and relevance of the Goan Bullfrog campaign.

Foster Community Engagement and Ownership:

To foster community engagement and ownership, it is essential to develop more accessible and inclusive pathways for the local community to participate in hands-on conservation activities. These activities may include habitat restoration, species monitoring, and anti-poaching efforts. Encouraging the formation and empowerment of local conservation groups or committees can facilitate community-driven initiatives and cultivate a sense of shared responsibility for Goan Bullfrog protection.

Strengthening partnerships and collaborative approaches

It is crucial for protecting the Goan Bullfrog. By working together with government agencies, NGOs, and local communities, we can align conservation efforts, leverage resources, and ensure a coordinated approach. It's important to involve the community in designing and implementing conservation initiatives, advocate for stronger legal frameworks, and continuously monitor and adapt our conservation strategies. Through these efforts, we can enhance the effectiveness of our campaign and secure a sustainable future for the Goan Bullfrog and its habitat.

Consistently Monitor and Adjust the Conservation Strategy:

Develop strong monitoring and evaluation systems to assess the impact of the conservation initiative aimed at preserving the Goan Bull Frog. Utilize data-driven insights to modify strategies and interventions as needed. Regularly interact with the community to grasp their changing perspectives, issues, and feedback, and utilize this input to enhance the approach of the conservation campaign. Conduct regular evaluations of the Goan Bullfrog's population trends and habitat conditions to ensure that the conservation activities are in line with the actual needs of the species. By focusing on these critical aspects, the organizations spearheading the "Save the Goan Bull Frog" initiative can improve the efficiency of their endeavors and cultivate a more enduring commitment from the local community to safeguard this endangered amphibian and its delicate environment.

Strengthening Legal Framework and Enforcement:

The research findings reveal a notable lack of understanding among the participants regarding the local regulations and laws designed to safeguard the Goan bullfrog. This underscores the necessity of enhancing the legal framework pertaining to the conservation of the species and ensuring the efficient enforcement of these regulations. By promoting awareness about the existing laws and regulations, as well as reinforcing their implementation, the local community can be empowered to take on a more proactive role in preserving the Goan bullfrog and its natural habitat.

Sustained Monitoring and Assessment:

It is imperative to prioritize the continuous monitoring and evaluation of conservation initiatives aimed at the Goan bullfrog. This will allow conservation practitioners to gauge the efficacy of their actions, pinpoint areas that require enhancement, and adjust their strategies in response to the changing needs and dynamics within the community. Regular feedback and engagement with the community can also facilitate the establishment of trust, address any concerns, and cultivate a collective sense of responsibility for the protection of the species.

Overall, the results indicated a positive perception towards the importance of conserving the Goan bullfrog among the local community. However, the study also revealed significant gaps in knowledge about the species' conservation status, threats, and ongoing initiatives. There was a lack of widespread engagement and participation in educational programs and campaigns specifically focused on the Goan bullfrog, suggesting that the current conservation efforts have not been entirely effective in reaching and involving the target population.

Despite the majority of respondents recognizing the ecological value of the Goan bullfrog, their awareness of conservation initiatives and local regulations aimed at protecting the species and its habitats was alarmingly low. Moreover, while the community expressed a general willingness to contribute to conservation efforts, their actual involvement in such activities remained limited.

The research also highlighted disparities in the level of awareness between the Goan bullfrog and other endangered species like the olive ridley turtle, indicating a need for more targeted and intensive outreach strategies tailored to the unique challenges associated with the Goan bullfrog's conservation.

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