IMPLEMENTATION OF THE PERIODIC REVIEW REQUIREMENT IN THE ARAB-MAB NETWORK: LESSONS FOR IMPROVING BIOSPHERE RESERVE EVALUATION

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ABSTRACT

Biosphere Reserves have been managed worldwide to demonstrate three integrated functions within their triple zonation scheme: conservation of natural and cultural values, logistic support and sustainable socio-economic development. Evaluation of these functions is formalised within the Periodic Review process whereby reports are submitted every ten years with the primary intent to evaluate the effectiveness of Biosphere Reserve concept implementation locally. However, the effectiveness of the Periodic Review as an evaluation system is poorly understood, and studies that document its regional implementation are lacking. Here we present the first regional review of the Periodic Review evaluation within the ArabMAB network. Using a mixed methods approach, we assess compliance with the Periodic Review report submission requirement, and quality of Periodic Review reports based on a novel approach. Our results show that the Periodic Review is characterised by significant delays (mean = 7.6 years), with five of 27 reports missing. Report quality for seven available reports varies, with most rating as low to average quality, and many lacking essential elements to assess Biosphere Reserve concept implementation as defined by Article 4 of the Statutory Framework of the World Network of Biosphere Reserves. We discuss factors that hinder successful compliance with the Periodic Review requirement regionally, and offer recommendations for improving Biosphere Reserve evaluation.

Key words: ArabMAB network, evaluation, management effectiveness, Man and the Biosphere (MAB), periodic review, UNESCO Biosphere Reserve

INTRODUCTION

Biosphere Reserves and the world network

Biosphere Reserves (BRs) are internationally designated sites under UNESCO's Man and the Biosphere (MAB) programme. Their main aim is to demonstrate model sites for sustainable development. Based on the conceptual definition laid down by UNESCO (1996) in the Statutory Framework of the World Network of Biosphere Reserves, BRs are designed with a triple zonation scheme that consists of core, buffer and transition zones. The three zones serve three integrated functions: (1) conservation of natural and cultural values, (2) logistic support for monitoring environmental change, research, education and training and (3) sustainable socio-economic development (UNESCO, 2017a).

Since the first designation in 1976, the World Network of Biosphere Reserves (WNBR) has grown to comprise 669 sites in 120 countries (UNESCO, 2017a), organised into regional networks: (1) AfriMAB for Africa; (2) IberoMAB for Latin America and the Caribbean; (3) EuroMAB for Europe and North America; (4) ArabMAB for Arab States; (5) the sub-regional networks of Asia and the Pacific; and (6) the inter-regional REDBIOS network. Regional networks are a key feature of the MAB programme and aim at fostering the exchange of knowledge and experience while promoting regional collaboration between BRs (UNESCO, 2017b).

Biosphere Reserve evaluation

Though designated internationally by UNESCO, BRs remain under the jurisdiction of their States. It is therefore the State's responsibility to ensure that appropriate governance and management plans are developed and operationalised by the BR governing institutions (public, private, NGOs or a combination of several institutions). Due to the complexity of the BR model both in concept and practice, its evaluation has evolved slowly relative to the general Protected Areas Management Effectiveness (PAME) evaluation discourse, and remains in need of improvement (Matar & Anthony, 2017; Price et al., 2010).

In 1995, the need for introducing an evaluation system for BRs was recognised by the MAB Secretariat, based on an evaluation of the 1984 Action Plan for Biosphere Reserves (Price, 2002). In response, the Periodic Review (PR) requirement was introduced after the Seville meeting in 1996, as the official process for the evaluation of BR implementation (UNESCO, 1996). As defined by the UNESCO-MAB programme, its overall objective is "to improve the biosphere reserves' quality and functioning as sites for testing and demonstrating approaches to sustainable development" (UNESCO, 2017c). The evaluation tool is a standard form – the PR Form – designed by UNESCO-MAB in 1996, and later updated in 2013 (Table 1).

The PR Form's main objective is to evaluate the effectiveness of the BR concept implementation locally, as defined in Article 4 of the Statutory Framework (UNESCO, 1996). It therefore focuses on compliance with, and appropriateness of the triple zonation

Table 1. Structure of the old and new versions of the Periodic Review Form

Structure	Old version titles (1996)	New version titles (2013)
Chapter I	Name	Biosphere reserve
Chapter II	Country	Significant changes in the biosphere reserve during the past ten years
Chapter III	Physical characteristics	Ecosystem services
Chapter IV	Zonation	The conservation function
Chapter V	Human activities	The development function
Chapter VI	Research and monitoring programmes	The logistic function
Chapter VII	Education, training and public awareness programmes	Governance, biosphere reserve management and coordination
Chapter VIII	Institutional arrangements	Criteria[a] and progress made
Chapter IX	Conclusion: Criteria[a] and progress made	N.A.

N.A. Not Applicable
Source: Adapted from Matar & Anthony, 2017
[a] Refers to Criteria of Article 4 of the Statutory Framework of the WNBR (UNESCO, 1996, p.17)

Dragon's Blood Trees (Dracaena cinnabari), Socotra Archipelago, Yemen © Rod Waddington

scheme; implementation of the triple functions requirements; local participation of authorities and communities in decision-making; collaboration with other BRs in the world network; and effectiveness of governance and operational mechanisms (plans, policies, programmes of work) (UNESCO, 1996). In order to assess compliance with and progress made on the above-mentioned elements, the PR Form 'asks' a series of qualitative questions and requests supporting documentation to validate claims made by the institution completing the form[1] (Matar & Anthony, 2017).

Periodic Review implementation and challenges

As of 1996, BRs were required to submit a PR report every ten years after their designation date, and all BRs designated before 1986 were expected to submit a first report in 1996 (Price et al., 2010; UNESCO, 1996). Until 2016, there were high levels of non-compliance with the PR requirement, in addition to major delays in response at an international level (Matar & Anthony, 2017; Price et al., 2010). For a long period (1996–2013), UNESCO-MAB authorities remained lenient with non-compliance, but the need for stricter enforcement was recognised in 2013, leading to the introduction of the Exit Strategy. The Strategy enabled UNESCO to withdraw a BR from the WNBR if it fails to: (1) submit a PR report after two warning letters are sent over a period of nine months since submission due date, or (2) fulfil the criteria of Article 4 after recommendations are made by the UNESCO-MAB Secretariat for corrective measures (Matar & Anthony, 2017; UNESCO, 2014). The implementation of the Exit Strategy recently gained momentum. As of May 2017, of 270 affected BRs in 2013, 126 (46.7 per cent) had satisfactorily responded to concerns on compliance with Article 4, by either submitting a follow-up report or a required PR report (UNESCO, 2017d).

As of 2017, the UNESCO-MAB Secretariat had received and examined 370 PR reports. The process resulted in the voluntary withdrawal of 38 BRs from the world network, with a massive recent withdrawal of 17 of 31 BRs in the United States (UNESCO, 2017c; 2017d). None of the withdrawn BRs were from the ArabMAB network, and all (except for one in the United States) were designated before 1987. The difficulty these early-designated BRs have in complying with the concept implementation lays mainly in applying the triple zonation scheme appropriately due to the designation approach used by UNESCO at the beginning of the MAB programme, that superimposed BR designation on existing protected areas (Ishwaran et al., 2008; Matar & Anthony, 2017). Though many sites remain challenged, the stricter enforcement of the PR requirement has generally yielded good results for many BRs in the world network, including revisions of zonation to better fulfil Article 4 criteria (Matar &

Figure 1. Map of Arab States

Anthony, 2017; Price, 2017). BRs that still present compliance issues, or those that have not yet submitted a PR, are given a last chance to do so by 2018–2019, and final decisions will be made in 2020 (UNESCO, 2017d).

Challenges faced locally by BR authorities in fulfilling the PR reporting requirement have been minimally documented and thus remain largely unknown. Sites designated before 1987 were found to have a higher rate of non-response, which is aligned with those that withdrew voluntarily from the network. In addition, a review of 12 countries showed that the costs of preparing one PR report could be considerable (Price et al., 2010). Peer-reviewed publications documenting national and regional experiences and challenges with PR implementation have been limited to the United Kingdom (Price, 2002) and Canada (Reed & Egunyu, 2013).

The need to research and document experiences of PR implementation in other regions beyond Europe and North America (i.e. EuroMAB) has been identified in a recent review of the discourse evolution of BR evaluation (Matar & Anthony, 2017). Researching and documenting local challenges faced by authorities is valuable for the improvement of BR evaluation. This in turn can help improve the potential of BRs to fulfil their conservation, development and logistic functions, therefore enhancing the MAB programme's contribution to the global sustainability agenda.

The ArabMAB network

The Arab region

Located at the crossroads between Asia, Europe and Africa, the Arab States consist of 22 countries as per UNESCO classification (Figure 1), including 12 countries in West Asia (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syrian Arab Republic (or Syria), United Arab Emirates (U.A.E.), and Yemen); six in North Africa (Algeria, Egypt, Libya, Morocco[2], Sudan[3] and Tunisia); three in East Africa (Comoros, Djibouti, Somalia); and one in West Africa (Mauritania).

Although Arab countries share many cultural features including the Arabic language, and a common history,

Old cedar tree, Barouk Cedar Forest , Lebanon © Shouf Biosphere Reserve

they present large disparities in climate, ecosystems (deserts, wetlands, oases, forests, coastal and marine), socio-demographics, economic development, resources, political regimes and stability (Mirkin, 2010).

The ArabMAB programme and regional conservation efforts

The ArabMAB regional network currently includes 30 sites[4] in 11 countries (UNESCO, 2017e). Despite an unstable socio-political context, countries of the ArabMAB network have made significant efforts towards conservation in the past two decades by joining related multi-lateral agreements and following the global trends of expanding their protected areas network (Matar, 2015; Talhouk & Abboud, 2009; UNEP, 2010; UNESCWA, 2010). The impacts of these efforts on conservation and sustainability outcomes are not well understood, nor are the impacts of recent destructive conflicts (Syria, Yemen, Sudan). Nevertheless, there has been a recognised need for increased regional cooperation and the development of integrated solutions that reconcile conservation with sustainable development (UNEP, 2010; CBD, 2017). The MAB programme can therefore play a key role in promoting the integration of these goals, and help foster regional collaboration.

The ArabMAB institution

The ArabMAB network was established in Amman, Jordan in 1997, with the main objective of promoting cooperation and collaboration between the region's National MAB Committees, in order to facilitate and support the implementation of the MAB programme in the Arab States. Main themes of cooperation defined by the ArabMAB network include the designation and establishment of new BRs, and the implementation of common research and educational activities (UNESCO, 2017f).

The institutional structure of the ArabMAB includes the Arab Coordinating Council, elected and mandated for formulating general policies, issuing decisions that promote the network, and following-up on their implementation (Salem, 1998). This Council is composed of interested members of the ArabMAB

Table 2. Criteria of Article 4 of the Statutory Framework

	Criteria
1	Representative ecological systems – graduation of human interventions
2	Significance for biological diversity conservation
3	Approaches to sustainable development on a regional scale
4	Appropriate size to serve the three functions
5	Appropriate zonation to serve the three functions
6	Participation of public authorities and local communities
7	a) mechanisms to manage human use and activities b) management policy or plan c) authority or mechanism for implementation d) programmes for research, monitoring, education and training

Source: UNESCO, 1996, p.17

National Committees, who elect an ArabMAB Bureau responsible for administration and management between the two Council meetings. A regional Secretariat is also established in a host member country to coordinate activities with the main regional UNESCO office based in Cairo, and the international UNESCO-MAB Secretariat in Paris (Matar, 2015).

Research scope and questions

In the context of a larger study on the status of concept implementation and management effectiveness of BRs in the Arab region, we identified the need to assess the status of PR implementation within the ArabMAB network (Matar, 2015). Using the lens of adaptive management applied to BR management, we recognised the importance of assessing the effectiveness of the current BR evaluation system, namely Periodic Review, as an integral and key aspect of understanding BR concept implementation and management effectiveness. Here we address the following questions:

1. To what extent have Arab BRs been compliant with the PR submission requirement, and how does this compare to the global trend?
2. How can the quality of submitted PR reports be characterised relative to the report's main goal of assessing compliance with Article 4 of the Statutory Framework?
3. What region-specific factors impact the effective implementation of the PR, and compliance with the reporting requirement?
4. How can these findings inform further action to improve the evaluation of BRs in the Arab region?

METHODS

Assessing compliance with the PR report submission requirement

We collected online periodic review submission data available from UNESCO-MAB sources. When applicable, we compiled the number and dates of PR submissions per BR, and computed delays in the submission of a first PR report using the 10-year period (relative to the designation date) as the standard timeline. Since BRs designated before 1986 were required to submit their first PR report (PR1) in 1996, we used 1996 as their submission due date. As for compliance with second PR report (PR2) submissions, we calculated delays based on a 10-year additional period since submission of PR1, when applicable. Our results excluded BRs for which a PR was not yet required (i.e. designated < 10 years ago). For PR1 and PR2 submissions, only years are reported with no reference to months. Therefore we used a simplified estimate of delays by subtracting 'year PR submitted' from 'year PR due' for PR1 and PR2. The number of years of delay is therefore expressed as a negative value, while positive values indicate the number of years the report was submitted in advance of the due date.

Cattle in Lake Aboulmime, Djurdjura Biosphere Reserve, Algeria © M.D.S. Akli

Assessing PR report quality

In a second step, submitted PR reports were solicited from the UNESCO-MAB Secretariat, regional UNESCO offices, National Committees or directly from BR staff when accessible. Despite extended efforts, less than half were obtained (seven of 16 existing reports when data was collected in 2014). The reports were obtained in digital format and excluded appendices, and we obtained permission from the MAB Secretariat to use them for scientific research while respecting anonymity. All collected reports were completed on the old version (Table 1) of the PR Form, and submission languages included French and English. We analysed PR reports using document analysis, a method known to be useful when determining if programme implementation reflects programme plans and constituencies (Bowen, 2009). Using content analysis (Krippendorff, 2004), we assessed report quality, specifically the degree to which Article 4 criteria of the Statutory Framework (Table 2) were addressed in the PR report.

In the absence of a standard rating system for the quality of a PR report, we reviewed existing rating frameworks for other types of reports in the environmental reporting space. We found that Environmental Impact Assessment (EIA) reporting experts have developed a detailed evaluation framework useful to the analysis of PR reports. Given the large differences in the types and goals of the EIA report compared to the PR report, we selected three EIA report evaluation criteria that are relevant and generalizable to report quality analysis, in addition to substantive content as the main determinant of report quality. These include completeness, comprehensibility and coherence of structure and format (Sandham & Pretorius, 2008). In the old PR Form, questions directly assessing compliance with the BR concept implementation are concentrated in the Conclusion, that is, in Chapter IX (Table 1), the only chapter that explicitly requests the BR to explain how each of the criteria of Article 4 is applied in practice. However, since earlier chapters in the PR Form elaborate some aspects of Article 4 criteria, we considered overall content of the report when assessing report quality.

Our evaluation of quality yielded three ratings: Low for reports not addressing the criteria of Article 4 in Chapter IX at all, but partially addressing them through previous chapters in the report; Average for reports partially addressing the criteria of Article 4 through Chapter IX and previous chapters; and High for those adequately addressing all of Article 4 criteria including within Chapter IX.

Data analysis and recommendation development

To address our third research question, we then carried out a series of consultations with senior experts and regional consultants: Mr Faisal Abu-Izzeddin, senior

consultant and advisor of the Shouf Biosphere Reserve in Lebanon – who recently (2017) completed and submitted its first PR report; and Dr Ghassan Ramadan -Jaradi, Secretary-General of the National MAB Committee in Lebanon. These informal communications aimed at learning, through a case study from the region, (1) how the PR evaluation is conducted locally; (2) how it is perceived by an implementing BR; and (3) local perspectives on, and recommendations for, improving BR evaluation.

Finally, we analysed our results on compliance with PR submission and on report quality, in light of insights gained through the experience of an implementing BR in the region, and combined them with the relevant literature to evaluate the effectiveness of the PR in the ArabMAB region as the sole evaluation method required officially for BRs by the UNESCO-MAB Secretariat. Using the adaptive management framework as an analytical tool, we then conclude with recommendations for improving BR evaluation in the ArabMAB network.

RESULTS

Compliance with the PR report submission requirement

Compiled data collected from the literature review and online submission data was used to summarise the status of compliance of ArabMAB BRs with the PR process (Table 3).

The review of the overall submissions shows that a total of five of 27 (18.5 per cent) due PRs are missing for full compliance with the basic submission requirement, with a mean delay of 7.6 years (and growing). The unsubmitted reports are all PR2 reports for the four Tunisian BRs in addition to Radom in Sudan.
All 19 PR1 reports submitted were submitted with delay, ranging from one to 18 years (mean = 3.8). Only three of eight due PR2 reports were submitted from the ArabMAB network: Wadi Allaqi's PR2 report was the only one submitted on time (two years early) of all PR1 and PR2 reports, Dinder's PR2 was submitted with only one year delay, while El Kala's from Algeria was submitted with four years delay.

Ain Zhalta Cedar Forest, Lebanon © Shouf Biosphere Reserve

Table 3. Summary of Periodic Review submissions for ArabMAB network countries

	Biosphere Reserves[a]	Year of Designation[a]	PR1 due	PR1 actual submission[a]	PR1 delay	PR2 due	PR2 actual submission[a]	PR2 delay
ALGERIA	Tassili N'Ajjer	1986	1996	2014	-18			
	El Kala	1990	2000	2002	-2	2012	2016	-4
	Djurdjura	1997	2007	2011	-4			
	Chrea	2002	2012	2014	-2			
	Taza	2004	2014	2016	-2			
	Gouraya	2004	2014	2016	-2			
	Belezma	2015	N.A.					
	Tlemcen Mountains	2016	N.A.					
EGYPT	Omayed	1981, Ext 1998*	2008	2011	-3			
	Wadi Allaqi	1993	2003	2004	-1			
JORDAN	Dana	1998	2008	2014	-6			
	Mujib	2011	N.A.					
LEBANON	Shouf	2005	2015	2017[b]	-2			
	Jabal Al Rihane	2007	2017**					
	Jabal Moussa	2009	N.A.					
MOROCCO	Arganeraie	1998	2008	2010	-2			
	Oasis du Sud Marocain	2000	2010	2017[c]	-7			
	Atlas Cedar	2016	N.A.					
QATAR	Al Reem	2007	2017**					
SUDAN	Dinder	1979	1996	2001	-5	2011	2012	-1
	Radom	1979	1996	2001	-5	2011	N.S.	-6
	Jebel El Dair	2017	N.A.					
SYRIA	Lajat	2009	N.A.					
TUNISIA	Djebel Bou-Hedma	1977	1996	1999	-3	2009	N.S.	-8
	Djebel Chambi	1977	1996	1999	-3	2009	N.S.	-8
	Ichkeul	1977	1996	1999	-3	2009	N.S.	-8
	Iles Zembra et Zembretta	1977	1996	1999	-3	2009	N.S.	-8
UAE	Marawah	2007	2017**					
YEMEN	Socotra Archipelago	2003	2013	2016	-3			
	Bura'a	2011	N.A.					

N.A. Not applicable, N.S. Not submitted, Sources: [a] UNESCO (2017e), [b] Abu-Izzeddin (pers.comm.), [c] UNESCO (2017d)
* The 1998 extension date was retained for analysis, ** These sites were not included in this PR compliance analysis since their submission will be documented in the next MAB ICC meeting (2018)

Table 4. Summary of Periodic Review report quality (Country and Biosphere Reserve names omitted to respect anonymity)

ArabMAB Biosphere Reserve number	Overall quality rating	Complete	Comprehensible	Coherent structure and format
BR1	Average	No	No	Yes
BR2	High	Yes	Yes	Yes
BR3	High	Yes	Yes	Yes
BR4	Low	No	No	No
BR5	Low	No	No	No
BR6	Average	No	No	Yes
BR7	Average	No	No	Yes

Analysis of language preferences shows that Algeria, Morocco and Tunisia submitted PR reports in French, while Jordan, Lebanon, Egypt, Sudan and Yemen used the English Form.

Report quality and compliance with Article 4 of the Statutory Framework

Table 4 presents findings from content analysis of the seven accessed PR reports submitted between 2009 and 2013, from Algeria, Egypt, Jordan and Morocco.

Report quality for the ArabMAB PR reports varies with most (3/7) rating as Average. For the five reports that rated as Low or Average quality, the problem lies mainly in not adequately responding to direct questions relating to 'how the BR is addressing each of the criteria of Article 4 of the Statutory Framework', by either omitting completely Chapter IX (4/7) or only partially addressing it (1/7). Based on the latest MAB ICC report, BRs scoring Low on report quality in our analysis, include two of three Arab BRs still considered non-compliant with Article 4 criteria based on recent evaluations by UNESCO-MAB authorities (UNESCO, 2017d). Moreover, only two of the reports were consistently complete, comprehensible and maintained a coherent structure and format as prescribed by the Form.

DISCUSSION

PR review in ArabMAB compared to international implementation

Until 2016, there was still a large gap in PR implementation in the ArabMAB network, with 13 of 27 PR1 and PR2 reports still missing for compliance with the submission due date (Matar, 2015). However, with the recent submission of seven reports between April 2016 and May 2017 (UNESCO, 2017d), this gap was narrowed to five missing PR2 reports only. Therefore compliance was slow for the ArabMAB network until the Exit Strategy and related follow-up were enforced effectively in 2016–2017. This finding is aligned with the international response trend to the PR submission requirement (Price, et al., 2010; UNESCO, 2009, 2017d). However, comparison of our results with the findings from the Canadian review of the PR evaluation process (Reed & Egunyu, 2013) reveals striking differences in compliance both in the level of delays and report quality, that is, all 15 PRs due for submission by the Canadian BRs were submitted on time, and all reports included clear evidence of compliance with the criteria of Article 4 (Reed & Egunyu, 2013). These differences emphasize the importance of conducting further research and documenting factors impacting the effective evaluation of BRs in different regional and national contexts, in the aim of exchanging know-how and improving BR evaluation.

For the ArabMAB, the lack of adequate information on how Article 4 criteria have been addressed at the BR level, both in Chapter IX or elsewhere in the report, in addition to persistent delays in submission, reflect potential problems for PR implementation in the region. We identify some of these problems by complementing our findings with our communications with local BR authorities in Lebanon, and further triangulating results with existing literature on the ArabMAB network.

Regional factors impacting effective PR implementation

Lack of perceived benefit for management

A challenge that emerged through our discussions with local BR staff was that, at least in some cases, PR

reporting is perceived as an administrative task with no perceived benefit to the internal staff working on the management of the BR, that is, reporting only because it is required, without perceiving the value of the process as a positive self-serving and learning tool for management improvement (Abu-Izzeddin, pers. comm.). This is particularly relevant to BRs that are already complying well with the BR concept implementation, and maintain high standards of management (updated management plans and sound management practices), such as Shouf BR in Lebanon (Matar, 2015; Van Cuong et al., 2017). In this particular case, the PR reporting process is perceived as overly bureaucratic, with lengthy forms comprising vague and repetitive questions, and no benefit to local management beyond fulfilling the submission requirement for compliance with the UNESCO-MAB programme (Abu-Izzeddin, pers. comm.). This aspect can reduce motivation to complete the PR reporting on time – especially when the enforcement and follow-up by UNESCO-MAB was weak, as the PR evaluation is experienced more as a burden rather than a learning exercise. Moreover, the 10-year period between evaluations decreases the perceived value and seriousness of the PR overall, since "UNESCO-MAB is entitled to follow-up earlier than 10 years on effective implementation by designated BRs" (Abu-Izzeddin, pers. comm.).

Self-evaluation bias

Similar to findings concerning other self-evaluation management effectiveness assessment tools, we suggest that the PR process in our context may suffer from interviewee bias (Cook & Hockings, 2011; Papp, 2011). This deficiency results from self-serving or motivational biases in attributions of causality, whereby individuals tend to accept responsibility for positive outcomes and deny responsibility for negative outcomes (Bradley, 1978). Further expressions of these types of bias may result in either defensive or counter-defensive attributions by participants (Bradley, 1978), for instance, inflation of successes by BR managers if they feel the evaluation is directly linked to their job performance, or understating successes to attract

Shouf Biosphere Reserve Team, Park House, Maasser El Shouf, Lebanon, December 2017 © Shouf Biosphere Reserve

Internal meeting, Shouf Biosphere Reserve © Shouf Biosphere Reserve

additional resources for management. Secondly, the accuracy of expert opinion can vary greatly, with both evaluation and understanding of concepts highly dependent on the evaluator(s) selected for the assessment (Johnson & Gillingham, 2004). This particular challenge was confirmed in our informal communication, as it was felt that the PR reporting process, if conducted only by internal members and hired consultants, can be highly susceptible to such bias and "lovely documents can be produced but they don't reflect reality" (Abu-Izzeddin, pers. comm.).

Lack of communication and assistance

In response to the international implementation challenges of the PR process, the UNESCO-MAB Secretariat has expressed a commitment to offer technical support through UNESCO's regional offices (Matar & Anthony, 2017; Price, 2002; Price et al., 2010). Hence, in the case of the ArabMAB network, this is the responsibility of the Cairo regional office. However, a local MAB National Committee has reported the absence of communication between the regional office and individual BRs locally regarding the PR process (Ramadan-Jaradi, pers. comm.). In addition, the interviewed BR staff mentioned that the process consisted only of receiving notification from the MAB National Committee about the request to submit a 10-year PR report (with no offer of support or assistance), quickly completing the report collaboratively, submitting the complete report to the National Focal Point, and receiving no substantive feedback on its contents. This simple administrative procedure confirms the absence of channelled support from UNESCO authorities to BR local staff for the evaluation process in the ArabMAB regional network. The recent recommendation for technical missions to be financially covered by hosting countries to support the PR process (UNESCO, 2017d) partially addresses this issue. However, since costs are still prohibitive for many countries to conduct the PR evaluation, other approaches to support the evaluation process should be considered.

Language

The language preferences for PR reporting for most countries are consistent with respondent preferences

per country in a recent survey on the ArabMAB region (i.e. French for Algeria and Morocco, English for Egypt and Jordan, and Arabic for Sudan and Yemen) (Matar, 2015). Therefore, the absence of Arabic language as an option for PR reporting may be one of the causes of delays in PR compliance for countries demonstrating an Arabic language preference (Matar, 2015). Though the BR staff that we interviewed did not encounter a language problem, they did confirm that the meetings conducted as part of the PR process used the local Arabic dialect as the conversation language and that they had internal staff with a good level of English writing skills. However the senior advisor who completed the PR Form mentioned that "if another BR in the region does not have an internal staff member with the required language skills, they may need to hire an external consultant" (Abu Izzeddin, pers. comm.). This in turn would add to the cost of the process, which may create a burden on the BRs' rather limited financial resources for management (Matar, 2015). For example, the cost of PR preparation in Sudan was reported to be in the range of US$ 3–5,000 (Price et al., 2010), which was comparable to Germany, and is considered quite high relative to the Sudanese economy.

Political instability and conflicts

Political instability is one of the major adverse characteristics of the Arab region, which has its impact on conservation management mainly through shifting priorities towards more urgent issues. This includes mobilizing human and financial resources for defence, security and basic needs, and often shifting nature conservation lower on the list of national priorities (Matar, 2015).

The latest MAB ICC meeting report (UNESCO, 2017d) explains the lack of submission of the remaining five missing PR reports, with political instability and security issues in both Tunisia and Sudan (for Radom). However, for the specific situation of being in a conflict zone, UNESCO-MAB has taken a special decision to postpone the enforcement of PR report submission until the situation becomes more stable. In the ArabMAB network, the five affected BRs submitted the follow-up reports that address recommendations made by the MAB Advisory Committee based on their PR1, and were evaluated as compliant with Article 4 (UNESCO, 2017d). Nevertheless, destructive conflicts in the Arab region have been, and remain, a constant threat for natural and cultural heritage preservation.

CONCLUSION AND RECOMMENDATIONS

Though PR implementation has been challenging in the ArabMAB region, none of the Arab BRs have been withdrawn from the WNBR, and UNESCO-MAB's recent final evaluations based on the Exit Strategy mention only three BRs from the region as not yet complying with Article 4 criteria (UNESCO, 2017d). Moreover, there is a local will and interest to improve the situation of BRs and increase their resilience in the face of political turmoil (Matar, 2015). From that perspective, and in light of our results, we have co-developed with the practitioners in Lebanon a series of recommendations that address the identified challenges, and can help improve BR evaluation in the Arab region, and beyond as relevant:

1. Creating a simpler, briefer tool for PR evaluation that would capture the essential elements of BR concept implementation without being excessive in length.

2. Introducing external evaluators who are local or regional experts and speak the local languages. They should be confirmed and trained by UNESCO-MAB for conducting PR evaluations, and should have no conflict of interest in conducting the task.

3. Conducting evaluations every five years instead of 10, which would increase the perceived value of the evaluation for local BR staff and avoid protracted delays in capturing concept implementation problems that need more immediate actions (Matar & Anthony, 2017; Price et al., 2010).

4. Promoting communication between regional offices and MAB constituencies nationally, to gain a better understanding of local needs. In the absence of budgets for regional offices to host technical missions to the ArabMAB region, it would be useful to consider channelling technical assistance remotely if physical presence is not possible, and when relevant.

5. Finally, considering technological advances, it is not inconceivable to develop a digital, and more visual and interactive PR Form for the next generation of BRs. This can make the PR report a dynamic living document and improve interest and motivation to conduct the review by local staff, as compared to completing a lengthy form that "dies an immediate death after submission" (Abu-Izzeddin, pers. comm.).

ENDNOTES

[1] For a detailed description of the PR report submission procedures, refer to Matar & Anthony (2017); Price (2002); Price, et al. (2010); Reed & Egunyu (2013).

[2] Morocco is assumed to include the disputed Western Sahara in this study.

[3] Sudan still included South Sudan at the time this study was conducted (started in 2011).

[4] The transboundary reserve between Morocco and Spain, i.e. the Intercontinental Mediterranean

Biosphere Reserve was excluded due to its shared governance with a European country, Spain.

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RESUMEN

Las reservas de biosfera se han gestionado en todo el mundo para demostrar tres funciones integradas dentro de su esquema de triple zonificación: la conservación de los valores naturales y culturales, el apoyo logístico y el desarrollo socioeconómico sostenible. La evaluación de estas funciones se formaliza dentro del proceso de revisión periódica mediante el cual cada diez años se presentan informes con la intención principal de evaluar la eficacia acerca de la implementación del concepto de reserva de biosfera a nivel local. Sin embargo, la eficacia de la revisión periódica como sistema de evaluación es poco conocida, y faltan estudios que documenten su implementación a nivel regional. Aquí presentamos la primera revisión regional sobre la evaluación de la revisión periódica dentro de la red ArabMAB. Mediante un enfoque novedoso basado en métodos mixtos, evaluamos el cumplimiento con el requisito de presentación y calidad de los informes de revisión periódica. Nuestros resultados reflejan que la revisión periódica se caracteriza por retrasos considerables (promedio = 7.6 años), con un faltante de cinco de los 27 informes. La calidad de los informes para siete informes disponibles varía, siendo esta de baja a media en la mayoría de los casos, y muchos carentes de elementos esenciales para evaluar la implementación del concepto de reserva de biosfera según la definición del artículo 4 del Marco Estatutario de la Red Mundial de Reservas de Biosfera. Abordamos los factores que impiden el cumplimiento exitoso del requisito de revisión periódica a nivel regional y ofrecemos recomendaciones para mejorar la evaluación de las reservas de biosfera.

RÉSUMÉ

Les réserves de biosphère à travers le monde ont été gérées de façon à mettre en exergue trois fonctions intégrées dans le cadre du plan de zonage triple: la conservation des valeurs naturelles et culturelles, le soutien logistique, et le développement socio-économique durable. L'évaluation de ces fonctions est formalisée dans le cadre du processus d'Examen Périodique, selon lequel des rapports sont soumis tous les dix ans dans le but principal d'évaluer l'efficacité de la mise en œuvre du concept au niveau local. Cependant, l'efficacité de l'Examen Périodique en tant que système d'évaluation est mal comprise et les études qui documentent sa mise en œuvre régionale font défaut. Nous présentons ici la première revue régionale d'évaluation de l'Examen Périodique au sein du réseau ArabMAB. En utilisant une méthodologie mixte, nous évaluons la régularité dans la remise des rapports d'Examen Périodique, ainsi que la qualité des ces rapports, en fonction d'une nouvelle approche. Nos résultats montrent que l'Examen Périodique est caractérisé par des retards importants (retard moyen: 7,6 ans). Cinq des 27 rapports étant manquants. La qualité des sept rapports disponibles est inégale, la plupart des notes étant de qualité faible à moyenne, et plusieurs manquent d'éléments essentiels pour permettre une évaluation réelle de l'implémentation du concept de réserve de biosphère, tel que défini par l'article 4 du Cadre statutaire du Réseau Mondial des Réserves de Biosphère. Nous abordons ici les facteurs qui entravent le respect de l'exigence d'un Examen Périodique au niveau régional, et proposons des recommandations pour améliorer l'évaluation des réserves de biosphère.