



NATIONAL RESEARCH FOUNDATION

MANAGEMENT RESPONSE

**TO THE EVALUATION OF THE DEPARTMENT OF SCIENCE
AND INNOVATION AND NATIONAL RESEARCH
FOUNDATION FLAGSHIP PROGRAMME**

24 July 2023

1. Introduction and background

The Department of Science and Innovation (DSI) and the National Research Foundation (NRF) Flagships are contractually required to be evaluated at the end or mid-term (more towards the end) of the 5-year funding cycle of their funding contract. As part of the evaluation, the NRF commissions a panel of experts to evaluate each Flagship Project against the Terms of Reference (ToR). The objective of the summative retrospective evaluation is to assess the performance of individual Flagships so that it may provide the NRF and the DSI with progress during the first 5 years since inception.

1.1. General purpose of the evaluation

The evaluation was intended to assess the following:

- Performance of the Flagship Projects and Programme in delivering on the objectives, milestones, Key Performance Indicators (KPIs) and planned outputs as contained in their respective Strategic/Business Plans guided by the Programme Framework.
- Extent to which the proposal for the establishment of the Flagship Projects has been implemented - milestones and expected outputs as presented in the original grant proposal.
- Performance of the host institution in:
 - Implementing and managing the Flagship Projects to date;
 - Provision of administrative and other logistical support for the Flagship Project operations;
 - High quality of scientific and technical leadership, and sufficient number of staff with high-level qualifications.
 - Ability to retain staff with critical and relevant expertise for the benefit of the Flagship and the institution.
- Future and sustainability plans of the Flagship Projects
- Performance of the NRF and DSI in contributing to creating an enabling environment for the successful implementation of the Flagship Programme as it relates to the respective roles and responsibilities of the NRF and DSI.

- To what extent did the Flagship Programme contribute towards the NRF 2020 Vision in catalysing knowledge production for societal benefit in the five strategic outcomes below:
 - Creating an internationally competitive, transformed and representative research system,
 - Establishing and maintaining leading-edge research and infrastructure platforms,
 - Growing the NRF into a reputable agency that will shape the science and technology system,
 - Pushing for science literacy and actively engaging with society, and
 - Managing and improving on a committed and representative NRF research and technical workforce.

1.2. Background of respective Flagship Projects

1.2.1. HIRAX Flagship Project

The Hydrogen Intensity and Real-time Analysis eXperiment (HIRAX) project was initiated as a (then) Department of Science and Technology (DST) and NRF University of KwaZulu-Natal (UKZN) Flagship Project under the then NRF Institutional Engagement and Partnership Development (IEPD) Programme and is currently administered under the Flagship Programme managed by the Research Chairs and Centres of Excellence (RCCE) Directorate of the NRF. The primary objectives of the HIRAX Flagship Project are to realize the HIRAX instrumentation and science goals by leveraging South African scientific leadership and strong national/international partnerships, as well as a robust human capital development (HCD) training program and engagement with local government and industry partners to realize socioeconomic benefits. The HIRAX Flagship Project was funded from 01 January 2016 – 31 December 2020 and received a total of R5 000 000 from the NRF.

1.2.2. UWC- Flagship Project

The Flagship on Critical Thought in African Humanities (FLACTAH) of the Centre for Humanities Research (CHR) at the University of the Western Cape (UWC) constitutes a novel arena for scholarly exchange, artistic creation and public inquiry into African political subjectivity, art and society, and technology and the human. FLACTAH was designed to host scholars and students from South African universities, public

institutions and national and international research bodies in a collaborative initiative to forge the next generation of humanities scholars, committed to the demands of building a post-apartheid South Africa. The Flagship Project was funded from 01 January 2016 – 31 December 2020 and received a total of R5 134 895 from the NRF.

1.2.3. TUT Flagship

The Research and Innovation for Societal Development (RISD) Flagship Project was established at Tshwane University of Technology (TUT) in 2019.

The Flagship Project at TUT was approved in the third quarter of 2019 to officially run from July 2019 to June 2024 and is supported by an NRF grant of R 2 million. The focus of the RISD is technology transfer (TT) from TUT to the community. This involves physical artifacts, virtual reality, dynamic processes, knowledge transfer and skills development. The research effort has three layers: basic science research, engineering research and research on the management and pedagogy of the technology transfer process.

1.3. Evaluation process

The evaluation was conducted by an independent Evaluation Panel of experts, namely:

- Prof Adrienne Edkins from Rhodes University (RU), South Africa,
- Prof Louise Bethlehem from The Hebrew University of Jerusalem, Israel,
- Prof Richard Battye from University of Manchester, United Kingdom, and
- Prof Kusakana Kanzumba from Central University of Technology (CUT), South Africa.

The panel was convened by Dr Mthunzi-Kufa of the Council for Scientific Research and Industrial (CSIR) in South Africa, whose responsibility was to ensure that the assessment process is fair and without prejudice, and that the criteria are applied correctly and consistently within and across panels, where applicable.

The Evaluation Panel developed an evaluation matrix to assist them in their task, based on the KPIs and the ToR for the evaluation of all three Flagship Projects. The evaluation method comprised reading and analysis of relevant documents, as well as interviewing key participants, which was mainly done virtually through Zoom and was

conducted between 25 October 2022 and 12 December 2022. The standard secretarial and logistical support was provided through the Reviews and Evaluation (RE) Directorate of the NRF before, during and after the evaluation. Services of a scribe was also enlisted to: (i) capture all proceedings and deliberations during the evaluation and ensure true reflection of all the discussions and recommendations during the panel, and (ii) projecting the notes captured, as required by panel at the end of the meeting for panel to ensure factual correctness of the minutes.

The review process involved both the assessment of documentation relating to the Flagship Programme and Projects as well as interviews of relevant stakeholders include the DSI and NRF management.

The feedback given in this NRF management response is informed by critically and objectively engaging with the ToRs, the Self-Evaluation Reports of the three Flagship Projects, the Final Report by the panel as well as the Management Response of the individual Flagship Projects.

2. NRF management response to findings, comments and recommendations of the Evaluation Panel

The NRF engaged with the findings, comments and recommendations as captured in the Final Evaluation Report. Provided below are the NRF management responses to key recommendations of the Evaluation Panel.

2.1 Hydrogen Intensity and Real-time Analysis experiment (HIRAX) Flagship

Key Findings

- i. The panel found that the commercially available, low-cost antennas proposed did not meet the requirements of detecting high redshift neutral Hydrogen, leading to crosstalk between antennas in a close packed array such as HIRAX. However, an acceptable design has been developed in conjunction with local manufacturing companies and 128 dishes are currently in production. The panel was also unable to interact with these industrial contacts but indicated that it seemed reasonable that it will have stimulated some innovation in South Africa and is better than sourcing them from China.

- ii. The panel indicated that the main competition for HIRAX is the Canadian Hydrogen Intensity Mapping Experiment (CHIME), which operates in the same frequency range as HIRAX. In addition, they indicated that all challenges experienced by HIRAX during their term of funding have been addressed and that the current schedule for deployment in 2023/24 is credible. The only question that they had, in terms of funding, appears to be how many dishes are deployed which was not clear from the information provided.
- iii. HIRAX has developed a plan to deploy "outrigger" stations, which provide higher resolution to allow possible spatial localization of the fast radio burst (FRB) – similar stations are planned to be deployed by the square kilometre array (SKA) throughout Africa. The panel felt that this illustrated how the Flagship Programme has contributed to driving expansion of astronomy in Africa with South Africa as a hub.
- iv. With regards to human capital development and transformation, the panel indicated that overall gender balance, while skewed towards males with 23 males out of 32 trained students, is probably better than is the norm in the physical sciences. They also indicated that from the total, 25 of the students were black, which is good in terms of transformation in the astronomy space.
- v. In terms of generated research outputs, the flagship has done well with publications in top astronomy journals with an addition of one journal in Physical Review Letters – the most highly ranked journal in the physical sciences.
- vi. The panel indicated that there was an issue with lack of flexibility when it comes to spending of the NRF funds. This as a result forced the flagship to spend the funds in the first year of granting. In addition, there was a challenge with retention of key staff. The panel also recommends that the NRF consider how to address this challenge in future as the flagship needs to retain those skills.
- vii. Substantial follow-up funding to build the full array, which is now projected between 128-256 dishes, has been awarded to a South African consortium by the NRF through the SRE and from international sources – in Canada, Switzerland, and the USA.

HIRAX response

The management of the HIRAX flagship has expressed that they acknowledge and are satisfied with the conclusions and substance of the report.

NRF management response

- i. The findings of the Evaluation Panel listed as numbers 1-7 above relates more to the technical implementation of HIRAX. (a) The NRF has noted the finding regarding the flagship's challenges with low-cost antennas. It is understood that acquiring tenders for dishes with the required specifications was beyond the flagship's control hence the process was not successful. In addition, the NRF also applauds the flagship for developing a design for producing the required dishes. The NRF congratulates HIRAX for the innovation, as well as the assumed job creation, where the local manufacture produces beneficiation despite the increased cost of production. (b) The "competition" with CHIME should not be regarded as negative but part of the context within which HIRAX functions and could be regarded as additional motivation as well as an opportunity to improve off lessons learnt by CHIME. (c) The expansion of HIRAX is commendable and indicative of both the innovative and pragmatic implementation by the Flagship Project.
- ii. In terms of the deliverables, outputs and outcomes (a) the NRF acknowledges and applauds the flagship for their outstanding success in terms of production and publishing in prestigious journals, (b) regarding human capital development and transformation, the NRF commends the flagship for training a greater number of black students (72%) but shares the concern regarding the low percentage of female students that are enrolled in HIRAX training programmes. Overall, the inclusion of female students shows that the flagship is moving in the right direction and demonstrates the flagship's commitment to contribute towards the transformation agenda, considering that history has demonstrated that the field of astronomy in South Africa has been dominated by males, and (c) the expansion of astronomy knowledge in Africa is commendable in creating impact in such a short period of time.
- iii. The NRF notes the challenges with regards to retention of key staff by the flagship, but as this is outside of the control of the NRF, the NRF would encourage the implementing institutions to look into finding potential solutions to retain the necessary staff.
- iv. The NRF agrees with the view of the Evaluation Panel in that whilst the misinterpretation of the funding conditions of the grant was problematic, and

that the NRF funding values were small in comparison to the budget requirements, the Flagship Projects are to be applauded in responding positively in leveraging additional funding, funders and partners off the initial seed funding of the NRF.

- v. Overall, the NRF acknowledges the work done and achievements of the flagship.

2.2 Research and Innovation for Societal Development (RISD) Flagship

Key Findings

- i. The Flagship has made significant progress in supporting knowledge production within the chosen areas, while developing institutional research capacity. In addition, the host institution has been supportive in providing financial assistance, administrative and logistical support to the flagship.
- ii. In terms of human capital development, the panel indicated that only 12 trained students have graduated from the programme. However, it should be noted that these students were not supported from NRF baseline funds.
- iii. The panel indicated that the flagship has lost key players in 2022.
- iv. The panel observed that only a few of the KPIs outlined in the business plan had not been achieved. Nevertheless, the leadership of the flagship provided explanations as to why such expectations were not realized. Some of the challenges include constraints in funding and internal restrictions which are not clearly articulated.
- v. With regard to partnerships, the panel observed that the majority of interviews were conducted for the energy component of the Flagship Project. The Panel stated that they did not receive any information regarding the industrial partnership from either the Water or industrial side. In addition, they stated that they were unable to conduct interviews with postgraduate students connected to the water leg of the Flagship Project.

RISD response

The management team of the RISD flagship has acknowledged and agreed with the conclusions reached in the Evaluation Report. They mentioned that the recommendations will be of great assistance to the University in the process of

shaping the activities that will take place during the remaining portion of the first cycle of the Flagship.

NRF Response

- i. The NRF wishes to express its gratitude to the TUT for the institutional assistance that it has provided to the flagship in order to ensure its success, including the institution's financial contribution and trust that this support will continue incrementally to enable the further success of this project.
- ii. With regard to the development of human capital, the NRF is aware of the difficulties that the flagship institution is having in terms of aligning itself with the DSI-NRF Postgraduate Student Funding Policy and has attempted to assist where possible. However, the NRF applauds the flagship for graduating 12 students, of which 10 are Africans and which was done in a short space of time.
- iii. The NRF noted the departure of key personnel from the flagship due to a variety of reasons, but it is unclear whether or not plans were made to fill the vacant positions by the institutions involved, as this aspect is outside of the control of the NRF.
- iv. The NRF noted the difficulties encountered by the flagship in terms of fulfilling the predetermined KPIs, some of which may have its origins within the institution/s and some as a result of the limitations of available financial resources. Notwithstanding this, the NRF is of the view that the project could have benefitted from enhanced communication with the NRF, and has noted the recommendation of the Evaluation Panel of the benefits in terms of having governance structures which involves the NRF.
- v. The NRF is disappointed that only partners and postgraduate students in the energy component of the flagship were interviewed as consequentially it is impossible for the Evaluation Panel to provide an accurate evaluation of the entire RISD Flagship Project and for the NRF to be able to adjudge and respond to the performance as reported.
- vi. Furthermore, NRF would like to express its' concerns regarding the lack of achieving some of the requirements or prerequisites of the Flagship Project, amongst others in appoint the Steering Committee which is responsible for the strategic guidance of the flagship and is accountable for the approval of the financial records of the flagship.

2.3 Flagship on Critical Thought in African Humanities (FLACTAH)

Key findings

- i. In terms of advanced research outputs, the panel has noted the massive achievements by the Flagship Project which includes books, special issues of journals, co-edited volumes, and articles in prestigious local and international scholarly journals.
- ii. In terms of human capital development, the panel notes that the Flagship Project supported, on average, 60 fellows per annum through a combination of NRF and International Donor Funding. Of these, 82% were South Africans, 81% Black and 51 % female. More specifically, the NRF directly funded 23 artists in residence, 28 MA students, 35 PhD students (classified as early career doctoral students), and three postdoctoral fellows. The Flagship Project has contributed to the stabilisation of enrolment figures at the MA and PhD levels. In addition, the Flagship's early-career and Next-Generation scholars have been employed.
- iii. Furthermore, the panel also noted that the Flagship continues to be a major source for the recruitment of high-quality graduates in the humanities and social sciences into the Higher Education job market nationally and internationally, with high rates of success, thus contributing to national priorities in Higher Education.
- iv. With regards to collaborations, the panel noted that the Flagship Project has a stellar record of international collaboration. The Flagship Project also has established great local collaborations.

FLACTAH response

The management team of the FLACTAH Flagship Project has acknowledged and agreed with the conclusions reached in the Evaluation Report. In addition, they have proposed the following to enable the stability of key functions of the flagship:

- i. Renewed funding support for the annual Winter Schools, public lectures, strategic public partnerships, international collaborations, and community arts education convening and production expenses.
- ii. New funding support for a convenor of programmes at the new facility in the Central Business District (CBD); a digital curator and archivist to liaise with new

- partnerships such as Cape Town Community TV and Public Radio; and a grants and planning officer.
- iii. A consolidation of the Flagship's governance structure through the Flagship Steering Committee and the CHR's Advisory Board with oversight of the Deputy Vice Chancellor Research and Innovation.
 - iv. On the strength of the FLACTAH's achievements, the CHR has leveraged a reciprocal research chair funded by the Irish Department of Foreign Affairs in 2023, launched as the Charlotte Maxeke-Mary Robinson Research Chair. This will further enable the regional collaboration of FLACTAH across the SADC region, connecting this into international collaborations with Trinity College Dublin, and other partners. Renewed funding of FLACTAH will enable the further leveraging of funds towards these and similar ends.
 - v. The flagship requests that the NRF consider receiving a proposal for the upscaling of FLACTAH to a Centre of Excellence (CoE). Steering Committee member, Prof Crain Soudien, noted that there are very few CoEs in South Africa, and for FLACTAH to become one would "represent a huge gain for the Humanities in the country". The CoE option would then be an effective mechanism to achieve the points above.

NRF Response

- i. Given that research is the primary activity of the Flagship Programme and Project, it is highly commendable that the FLACTAH has produced the level of outputs as reported, and especially so within the limitations imposed by the available resources. The NRF concurs with the Evaluation Panel's view in terms of the sheer extent and consistency of their achievements measured against the key objectives contained in the original proposal.
- ii. The NRF applauds the outstanding work done by FLACTAH in terms of student training, the aligned demographic transformation and especially the fact that early career and next generation researchers have found employment and all of which strengthens the human capital development pipeline in the focus areas of FLACTAH.
- iii. The NRF also recognizes and commends the flagship's ability to secure local and especially foreign collaboration, and which has obviously played a

significant role in the FLACTAH's overall success in leveraging additional funding.

- iv. The FLACTAH's recommendation to consolidate its governance structures is supported and is considered as an activity that the UWC can implement as part of its sustainability initiative for FLACTAH.
- v. Lastly, the NRF took note of the requests made by the flagship (and indeed the Evaluation Panel) (a) for additional funding and (b) to upscale it into a fully-fledged CoE. These requests will be considered and responded to within the context and priorities as contained in the Decadal Plan as well as available resources once engagements with the DSI are concluded.

2.4 General findings across all Flagships

2.4.1. Funding

Funding was a major issue for all Flagship research programmes, with challenges such as the level of funding, the way in which it was disbursed, and the lack of student funding. Most projects were able to obtain additional funding, and in most cases that funding exceeded the initial seed funding provided by the NRF. It is appropriate that the Flagship grant be presented as seed funding to catalyse the initial growth of the projects towards independent sustainability.

NRF Response

The NRF agrees with the view of the Evaluation Panel in that whilst the misinterpretation of the funding conditions of grant was problematic, and that the NRF funding values were small in comparison to the budget requirements, the Flagship Projects are to be applauded in responding positively in leveraging additional funding, funders and partners off the initial seed funding of the NRF.

Whilst the NRF acknowledges the procedural issues with regards to funding, the NRF is of the view that all the Projects could have benefitted from enhanced communication with the NRF and has noted in this regard the recommendation of the Evaluation Panel of the benefits of having governance structures which involves the NRF.

It should be noted that the DSI-NRF Flagship Programme was historically constrained by limited funding and currently any requests for additional funding

have to be considered within the context and priorities as contained in the Decadal Plan as well as available resources.

2.4.2. Programme management

Several of the interviewees reflect on the need for close cooperation between the different stakeholders involved in management in the Programme. Closer cooperation between the DSI and NRF in the management of the Flagship Programme would improve the management. In addition, there was a request for better collaboration and more structured regular engagement between the institution and the NRF.

NRF Response

As indicated in earlier sections, the NRF has noted the recommendation and wishes to place on record that the NRF, as indicated above and with varying success, attempted to establish governance structures within each flagship as section 5.7 of the Flagship Framework and Guide indicates that *“Each approved Flagship will be expected to establish a Steering Committee that will be an advisory body for the Flagship. The Steering Committee will oversee strategic planning and effective execution of the Flagship objectives, monitor performance, financial viability and ensure that a Flagship attracts, trains and retains suitably skilled human resources. The nomination of Steering Committee members will be led by the Principal Investigator and the university DVC of Research in consultation with the NRF executive responsible for the Flagship initiative. Nominees will be approved by the RCCE Executive Director.”*

It should be noted since the Flagship Programme was transferred from IEPD to RCCE, that only the UWC Flagship Project adhered to the conditionality to establish the Steering Committee and which included the NRF.

However, the NRF is of the view that, where the hosting institutions are currently continuing the further implementation of their respective Flagship Projects as part of their sustainability initiative, they can action this recommendation.

2.4.3. Institutional management

Direct involvement of senior management from the institution in the Flagship was a highly enabling factor. From the assessment, the experience of Flagship Principal Investigators (PIs) and academics with highly involved senior management was better than Flagships where senior management were less involved. Strong integration of the Flagship Projects into the university systems, strong support from the top and wide access to institution structures was strongly correlated with success.

NRF Response

The NRF notes and agrees with the recommendation and wishes to remind the flagship stakeholders that the main objectives of the DSI-NRF Flagship Programme are indeed to (i) fund a Flagship Project within a chosen area that addresses the university's research priorities and (ii) to develop institutional research capacity and hence requires the DVC Research to chair the governance structure as obligatory and an essential requirement for the success of the Flagship Projects in achieving the stated objective for the benefit of the collaborating institutions.

2.4.4. Transformation

All the Flagship Projects demonstrated that they are good mechanisms for multidimensional transformation, both in terms of human capacity development and in transforming ways of knowing and ways of doing. The targeting of universities with less research experience is highly enabling and a critical driver of improvements in the research outputs. However, additional support should be provided to Flagships embedded in universities lacking substantial previous research experience, culture, and management. Money is not a sufficient enabler in these cases and finance needs to be linked to support for researchers and for development of essential university support structures.

NRF Response

The NRF commends the flagship institutions on the outstanding work done in functioning as good mechanisms for multidimensional transformation. The NRF notes and agrees with the recommendation that additional support (and not

necessarily only funding) be provided to Flagships embedded in universities lacking substantial previous research experience, culture, and management. However, it is the view of the NRF that the DSI-NRF Flagship Framework and Guide provides a model which if implemented as contained in the latter document, would enable and enhance the probability of success and decrease the risks. As reported by the Evaluation Panel, challenges such as communication, involvement of institutional senior executives, extent of collaboration and governance certainly points to an absence of essential success factors in the implementation process and which could have been prevented if the Framework and Guide was followed more optimally. Despite the latter view, it is clear that especially HIRAX and FLACTAH, to a large degree, navigated these challenges successfully and has achieved noteworthy performance levels.

2.4.5. Collaboration

The Flagship Projects were a vehicle for the development of strong collaborations nationally, regionally, and internationally. Of note, it was important to see that inter-Africa collaboration was emerging as an important topic. In addition, there was a need to consider mechanisms to support specific types of collaboration, for example internships as part of industrial training in the TUT Flagship. Additionally, there was a need to promote collaboration between academy and industry, and science councils.

NRF Response

The NRF notes this finding and which resonates with the requirement of the DSI-NRF Flagship Programme Framework and Guide that (i) *relevant inter-institutional collaborations and partnerships that will add value and are appropriate to achieving the desired scale and impact of Flagship activities are permissible and encouraged* and that (ii) in the scorecard “outstanding” is defined as “*Outstanding and represent world leading standards. Collaborators and partners have been identified to develop and maintain excellence in this research area.*” Again, it clear that collaborations were identified as an essential requirement for the success of this programme and projects.

2.4.6. Sustainability

All the Flagship Projects demonstrated evidence of sustainability. This was particularly evident for the FLACTAH and HIRAX who have already continued beyond the additional five-year funding period, raised substantial additional funding, recruited a cohort of appropriately skilled individuals and conceptualised concrete future directions. The sustainability of the RISD is harder to determine since they are still in the middle of the programme and, based on the timing, was the Flagship Project most dramatically affected by the COVID-19 Pandemic. However, there are good signs that the Flagship Projects' leadership are focused on efforts towards sustainability, for example by establishing themselves in a new building and by submission of grants to garner additional funding.

NRF Response

The NRF is encouraged by this finding and commends the leadership of the respective Flagship Projects, especially HIRAX and FLACTAH, for the work done towards achieving sustainability and which in the view of the NRF will be enabled by the research relevance and excellence of its outputs and the extent of their purposeful partnerships. The NRF notes the views of the panel regarding sustainability of RISD but has also taken cognisance of the institutional and other challenges identified during the evaluation and would like to encourage the Tshwane University of Technology to address these challenges.

3. Conclusion

The NRF thanks the members of the Evaluation Panel, the HIRAX, FLACTAH and RISD leadership, management, partners, collaborators, students and all other stakeholders for their participation, inputs and for their willingness to contribute their time and effort to facilitate a successful outcome.

The NRF is generally pleased with the overall positive outcome of the evaluation, and the findings and recommendations. In particular, the NRF welcomes the finding of the Evaluation Panel that the performance of the three Flagship Projects in general and in terms of their set objectives was satisfactory and that the Flagship Projects achieved their primary goals. Especially pleasing is the

finding of the panel that the value derived from the grants awarded to Flagships is clearly demonstrated through human capital development, transformation and the generated outputs and that the latter would not have been possible without the NRF grants.

The NRF agrees with the Evaluation Panel in encouraging closer cooperation between the NRF, the DSI and senior management of the different HEIs involved in the Flagship Projects.

The NRF has noted the endorsement of the Evaluation Panel that funding should be continued for all three programs and enhanced if and where possible and that the recommendations of the Evaluation Panel for Flagship support are conditional upon satisfactorily achieving the set goals within the different Flagship applications. As indicated earlier, the NRF will consider any requests for additional funding within the context and priorities as contained in the Decadal Plan and through new initiatives within the NRF such as the envisaged University Development Programme and Partnerships.

The NRF will endeavour to assist the three Flagship Projects, together with the DSI and other key stakeholders in addressing the weaknesses and gaps identified by the Evaluation Panel, through its existing and available modalities, within its control, priorities, and available resources.