Mobilising the South African Youth in Science and Technology Journalism

IMPACT STUDY

YOUTH SCIENCE AND TECHNOLOGY JOURNALISM PROGRAMME

Measuring the efficiency, effectiveness and impact of a South African DSI-Funded Community Project

Executive Summary

This report presents the findings of the evaluation study of the Youth Science and Technology Journalism (YSTJ) programme. The study was conducted by the South Africa Agency for Science and Technology Advancement (SAASTA) for the National Research Foundation (NRF), an entity of the Department of Science and Innovation (DSI), in conjunction with Redflank, a management consulting company. Since its inception in 2016, the YSTJ programme has not been evaluated to measure its effectiveness and/or efficiency. As a result, in 2020, it was deemed necessary to conduct an evaluation study to assess whether the objectives of the programme have been achieved or not, and if so, to what extent.

A 'Results Chain' framework was used as a point of reference to undertake this study, as informed by the programme objectives as a key point of departure. The framework was more appropriate as it focused on the analysis of the programme's activities that were undertaken to achieve the set objectives, including the intended outputs, outcomes, and impacts to develop an evaluation tool. The subsequent methods of data collection included a desk review of documents, electronic surveys, telephonic interviews, and focus groups. The adoption of both secondary and primary data collection methods was to gain insights with regard to the implementation of the programme, the understanding of its objectives, any possible constraints experienced, and to identify critical areas for programme improvement.

A mixed-methods approach was used to analyse survey responses quantitatively while interviews and focus groups were leveraged to qualitatively refute or corroborate the findings to provide for a more in-depth analysis that generated rich data that provided insights on whether the programme objectives were achieved or not. The participants of this study included 36 form YSYJ programme Interns, 29 host, and 9 non-host community media organisations.

To evaluate the results, the study applied the internationally recognised Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) Criteria, mainly focusing on Project Efficiency, Effectiveness, and Impact to assess implementation success of the programme. The analysis revealed that the programme has been both efficient and effective, and in fact, the findings showed that to a larger extent, the programme achieved most of its objectives. This is reflected in the results that showed a significant increase in the development of science journalism skills amongst the youth and community media organisations. Not only did the host community media organisations indicate their appreciation of the programme in their radio stations, the non-host community media organisations showed overwhelming interest in hosting and mentoring interns, which could contribute to the sustainability of the programme. Notwithstanding the notable achievements, there are still certain areas that require improvement.

It is recommended that more Science, Technology, Engineering, Mathematics and Innovation (STEMI) and Journalism graduates, as well as non-hosting community media organisations are on-boarded into the programme. More effort should also be directed at capacitating the host media organisations with mentorship skills and resources to create favourable working conditions for the interns. Finally, future

evaluations could focus on the perceptions by community media audiences with regard to the science and technology content and the extent that awareness of STEMI is generated.

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Acronyms

Acronym	Definition
AVE	Advertising Value Equivalency
DSI	Department of Science and Innovation
DST	Department of Science and Technology
ERA	European Research Area
EU	European Union
GCIS	Government Communication and Information System
ICASA	Independent Communications Authority of South Africa
IPRDP	Innovation Partnership for Rural Development Programme
MDDA	The Media Development and Diversity Agency
MoU	Memorandum of Understanding
NAB	National Association of Broadcasters
NASW	National Association of Science Writers
NDP	National Development Plan
NRF	National Research Foundation
NSES	National Science Education Standards
NSI	National System of Innovation
SAASTA	South African Agency for Science and Technology Advancement
SASJA	South African Science Journalists' Association
SES	Science Engagement Strategy
SHERP	Science, Health and Environmental Reporting Program
STEM	Science, Technology, Engineering, and Mathematics
TIA	Technology Innovation Agency
UK	United Kingdom
YiSS	Youth into Science Strategy: Nurturing Youth Talent for a Stronger National System of Innovation
YSTJ	Youth Science and Technology Journalism

“Science doesn't care, by and large, what the answers are. It's only interested in getting the right answer. And journalism should be very much that way”

- *Scott Pelley, American Journalist, and Author: CBS News*

1. Introduction

This report provides the findings from the impact study conducted on the Youth Science and Technology Journalism (YSTJ) programme. The South Africa Agency for Science and Technology Advancement (SAASTA) in partnership with Redflank, an external service provider, conducted the study on behalf of the National Research Foundation (NRF), an entity of the Department of Science and Innovation (DSI). Redflank developed the research methodology, literature review, data collection instruments and edited the report. The NRF|SAASTA collected data and developed the report.

2. Background

The YSTJ programme, now renamed the Science Journalism Community Service programme aims to promote interest in science and technology among disadvantaged youth by encouraging the communication of science and technology stories in all South African indigenous languages (SAASTA, 2019). In 2016, the DSI, in support of the comprehensive Innovation Partnership for Rural Development Programme (IPRDP), tasked SAASTA, a business unit of the NRF with implementing the YSTJ programme. Since then the YSTJ programme expanded from five to nine provinces in 2019, spreading its footprints nationally to also address one of the DSI's strategic goals to popularise science, technology, and innovation among the youth, and contribute to improving the general public's understanding and awareness of science and technology.

2.1. Overview of the YSTJ Programme

The YSTJ programme was established to promote science journalism in South Africa. Due to its growth over the years, the DSI-SAASTA identified the YSTJ programme as a media niche platform and the first of its kind in South Africa to communicate science-related stories with the public. The YSTJ programme was launched in 2016 in five provinces, namely; the North West, Limpopo, Eastern Cape, Mpumalanga, and KwaZulu-Natal. In 2017/18, the programme was expanded to include Gauteng and the Northern Cape (SAASTA, 2017). This milestone was successfully achieved through partnerships with various stakeholders, including community media, academia, and scientific experts, among others. Throughout this period, 55 young unemployed graduates have been deployed to participate in the YSTJ programme across the seven provinces.

During the launch of the YSTJ programme, SAASTA collaborated with the South African Science Journalism Association ("SASJA") to recruit mentors to support the science journalism interns and assist with the development of their science journalism skills. As a result, during the 2015/16 financial year, 17 candidates were recruited and placed at various community media hosts as interns. During the 2016/17 financial year, the programme generated a total of 702 stories, covering stories on the Innovation Partnership for Rural Development Programme (IPRDP) (77), science and technology (341), and other general media topics (284).

2.2. Objectives of the YSTJ Programme

The YSTJ programme aims to develop science journalism skills amongst the youth while promoting an interest in science and technology (SAASTA, 2020). The programme is aligned with the DSI Science Engagement Strategy (SES) and the NRF Strategy 2020.

The expected outcomes of the YSTJ programme are as follows:

- Development of basic science journalism skills in youth and enhanced career opportunities;
- Enhance interest in science and technology in local communities and the recognition of indigenous and grassroots innovation existing in communities;
- Enhance the understanding of the importance of science and technology reporting in community media organisations; and
- Communication of specific demonstrated DSI-funded technologies and general science stories in a variety of languages to local communities.

2.3. The Purpose and Objectives of the Study

Since its inception in 2016, the YSTJ programme has not been assessed to evaluate its effectiveness and/or efficiency. It was under this background that in 2019 it was deemed necessary to undertake this study as indicated below.

2.3.1. Purpose of the Study

SAASTA, on behalf of the DSI, conducted an assessment study on the efficiency, effectiveness, and impact of the YSTJ programme as one of the DSI's initiatives for popularising science and technology in society. The study focused on the period of 2015/16 to 2017/18.

2.3.2. Objectives of the Study

The study had the following objectives aligned to the four objectives of the YSTJ programme:

i. To establish whether the YSTJ programme has contributed to the development of basic science journalism skills in youth and enhanced career opportunities. [Referred to as Objective 1]
ii. To establish whether the YSTJ programme has contributed to the enhancement of interest in science and technology in local communities and the recognition of indigenous and grassroots innovation existing in communities. [Referred to as Objective 2]
iii. To establish whether the YSTJ programme has contributed to the enhancement of the understanding of the importance of science and technology reporting in community media organisations. [Referred to as Objective 3]
iv. To establish whether the YSTJ programme has contributed to the communication of specific demonstrated DSI-funded technologies and general science stories in a variety of languages to local communities. [Referred to as Objective 4]

3. Research Methodology

Section three focuses on describing the research design and methodology applied in the assessment of the impact of the YSTJ programme as one of the DSI's initiatives for popularising science and technology in society.

3.1. Research Approach

The study followed a 'Results Chain' research approach as the point reference for this impact assessment. The results chain describes the process whereby specific activities are conducted to convert inputs into outputs, which then translate into outcomes that contribute to broader impacts. The results chain thus defines the elements that contribute to the delivery of results, in a chain of causality, from inputs to impacts as illustrated in Figure 1 below.

Figure 1: Results Chain used for the YSTJ Programme Impact Study

The results chain for this project was developed using the objectives described in Section 2.2 as its key point of departure. Key activities conducted per objective were workshopped with SAASTA staff, outputs, outcomes, and impacts were then developed based on these key activities and the overall objective. A heat mapped results chain was produced as a result of the steps taken in analysing the quantitative data.

3.2. YSTJ Programme Results Chain Approach

The following figures outline the objectives of the impact study, underpinned by the results chain.

Figure 2 below is based on Objective 1: Development of basic science journalism skills in the youth and enhanced career opportunities.

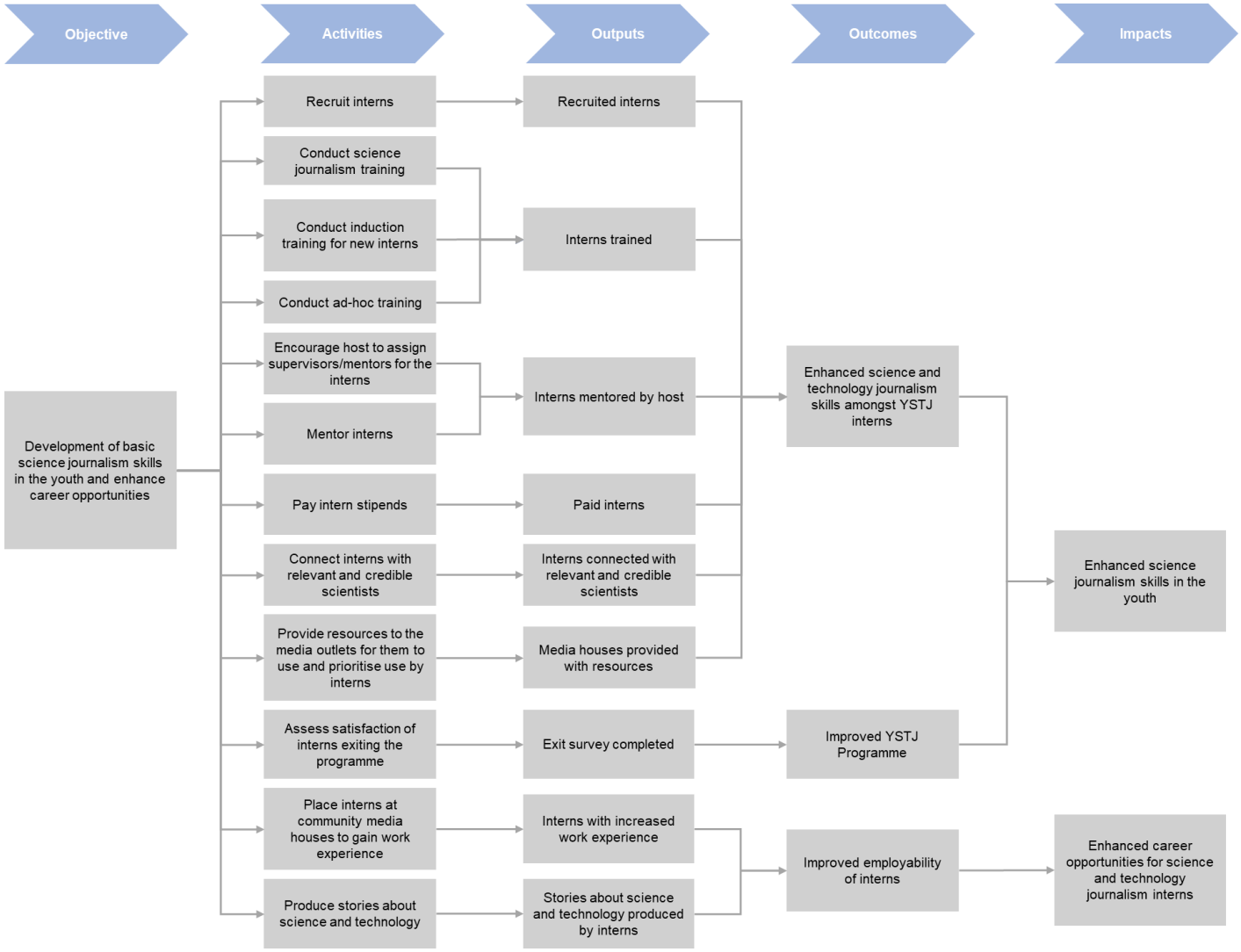
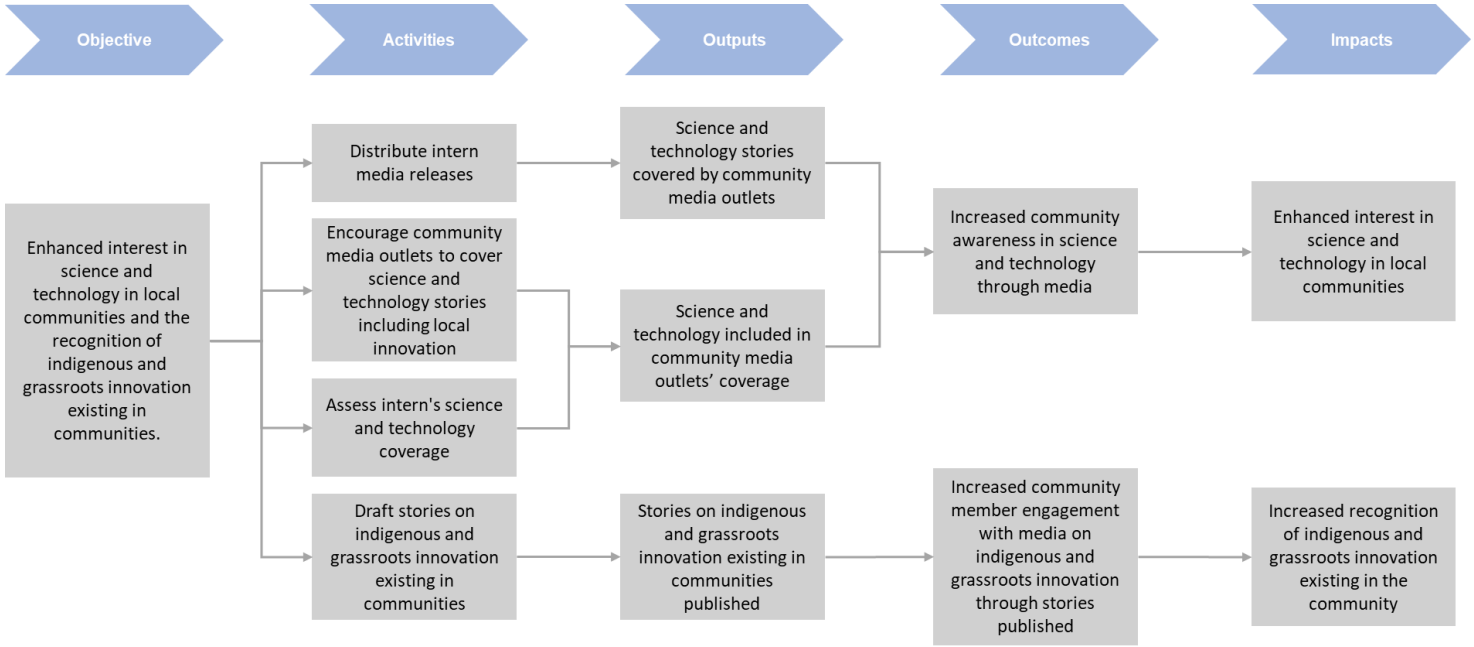


Figure 2: Results Chain - Development of Basic Science Journalism Skills in the Youth and Enhanced Career Opportunities

Objective 1 consists of twelve key activities that flow into nine core outputs. These outputs are expected to result in three outcomes that contribute to two broader impacts.

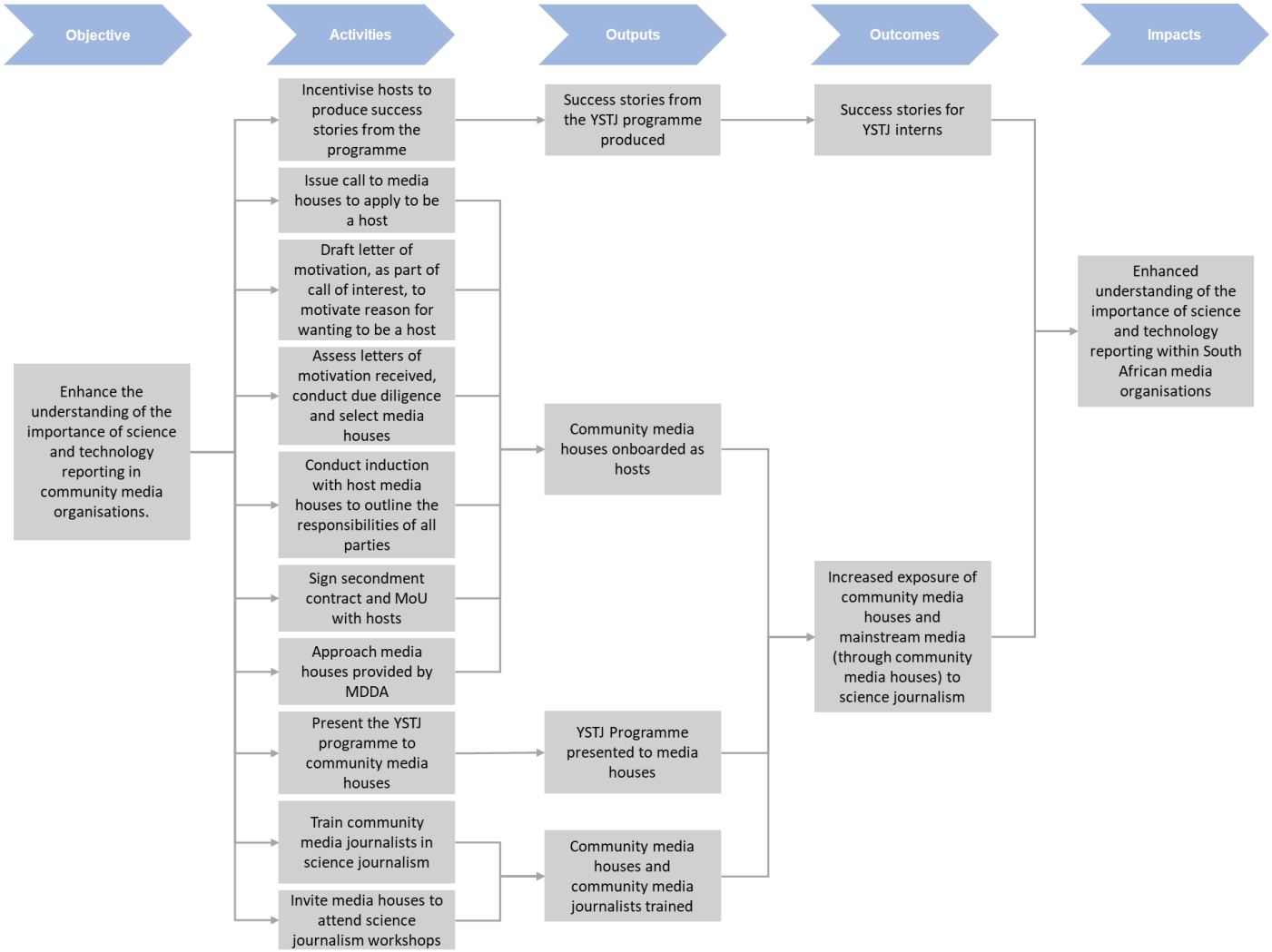
Figure 3 below is based on Objective 2: Enhanced interest in science and technology in local communities and the recognition of indigenous and grassroots innovation existing in communities.



Objective 2 consists of four key activities that flow into three core outputs. These outputs are expected to result in two outcomes that contribute to two broader impacts.

Figure 3: Results Chain – Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities

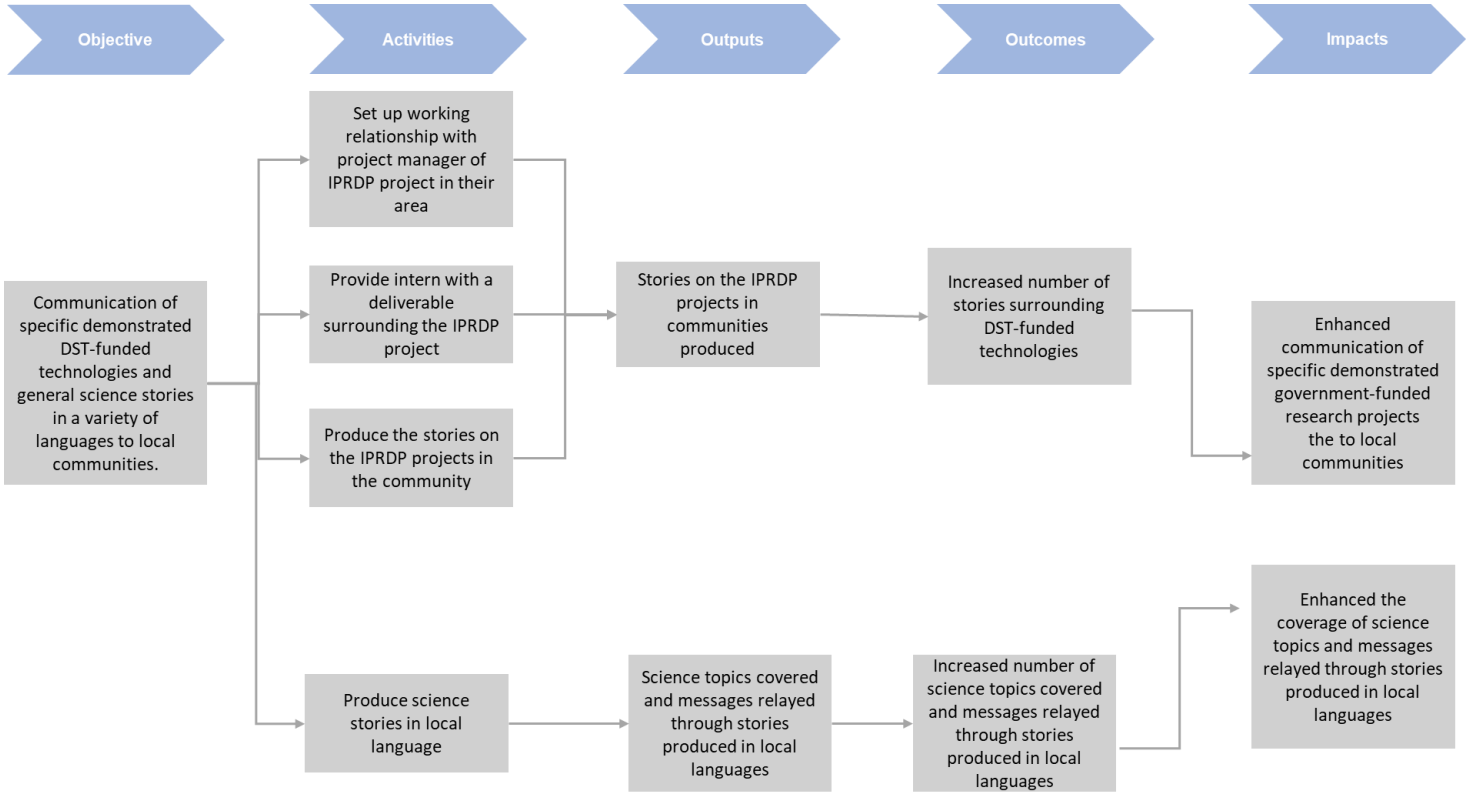
Figure 4 below is based on Objective 3: Enhance the understanding of the importance of science and technology reporting in community media organisations.



Objective 3 consists of ten key activities that flow into four core outputs. These outputs are expected to result in two outcomes that contribute to one broader impact.

Figure 4: Results Chain – Enhance the Understanding of the Importance of Science and Technology Reporting in Community Media Organisations

Figure 5 below is based on Objective 4: Communication of specific demonstrated DSI-funded technologies and general science stories in a variety of local languages.



Objective 4 consists of four key activities that flow into two outputs. These outputs are expected to result in two outcomes that contribute to two broader impacts.

Figure 5: Results Chain – Communication of Specific Demonstrated DSI-Funded Technologies and General Science Stories in a Variety of Local Languages

In line with the approach adopted for the study, the following data collection methods, sampling techniques, and data analysis methods were followed.

3.3. Data Collection

This section details the different data collection methods adopted for the study. These entailed both quantitative and qualitative data gathering tools, incorporating both desk-based and consultative research. For this study, both primary and secondary data were gathered, reviewed, and analysed.

3.3.1. Desk-Based Research

The desk-based research included an analysis of secondary data and consisted of a literature review of regulatory frameworks, relevant published work, case studies, and other relevant documents. These documents were utilised to enrich data collection instruments and synthesize the findings, conclusions, and proposed recommendations in this report. The literature reviewed included, but was not limited, to the following documents:

- The Science and Technology Youth Journalist Programme Implementation Plan for the Innovation Partnership for Rural Development Programme;
- The Science Engagement Strategy;
- The 2019 White Paper on Science, Technology, and Innovation; and
- NRF|SAASTA's Annual Performance Plans: 2016/17 – 2018/19.

While acknowledging the limitations of available data, specifically on the topic under study, several other relevant documents were reviewed to enrich the study, mainly focused on; Science Literary in South Africa and its importance, Science Literacy, and Science Journalism and Science Journalism in South Africa and Internationally. Additionally, a brief overview of community media in South Africa was included.

3.3.2. Data Collection Procedure

The data was sourced as illustrated in Figure 6 below.

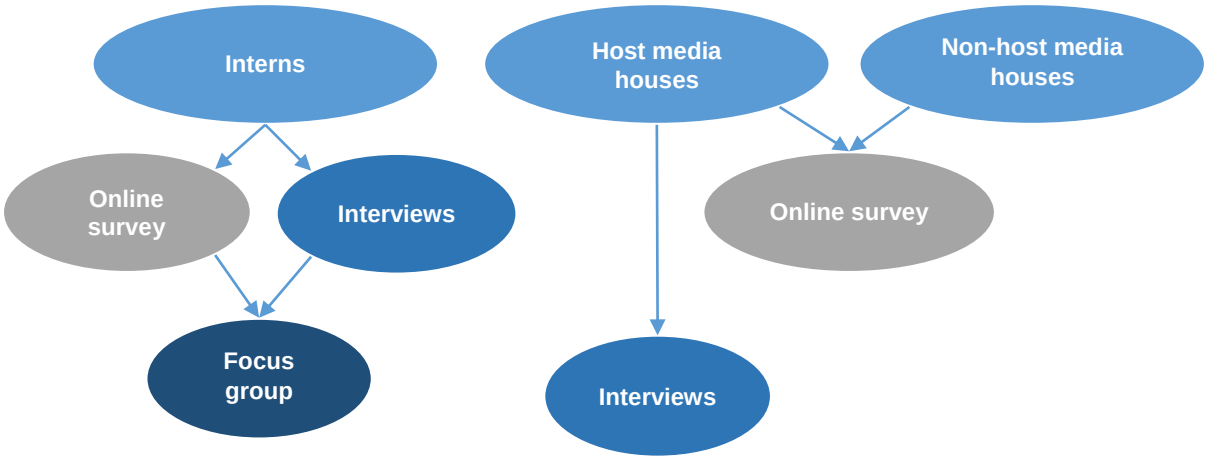


Figure 6: Data Collection Flow during the YSTJ Study

3.3.2.1. Surveys

Surveys were used to elicit information of a more quantitative nature. SAASTA made use of an online survey tool to allow the respondents to conduct the survey electronically. Three different surveys were developed; one for interns, one for host media organisations, and one of non-host media organisations. The surveys were then distributed using electronic mail to the entire database of interns and community media organisations to ensure a sufficient response rate. A total of 48 surveys were completed as follows:

- 15 Host community media surveys
- 9 Non-host community media surveys
- 24 YSTJ intern surveys

To encourage survey response rates, the surveys were designed to be short, relevant, and focused. SAASTA sent out a minimum of three prompts to the database to remind the identified participants to complete the survey and to assist in increasing response rates. The raw data were transferred to a Microsoft Excel spreadsheet for analysis.

3.3.2.2. Interviews

Up to 26 interviews were planned for the study; however, only 17 interviews were conducted. As a result of travel restrictions during the COVID-19 pandemic, the interviews were conducted telephonically using a semi-structured interview schedule that was based on the questionnaires. These interviews were transcribed accordingly. Of the 17 interviews, 12 were conducted with YSTJ interns, whiles five were conducted with host community media organisations.

3.3.2.3. Focus Groups

The focus groups took the form of a facilitated discussion focusing on key discussion points. Two YSTJ intern focus groups were held, each consisting of eight participants, one observer, and one facilitator. Participants for each focus group were chosen using the simple random sampling method, described in Section 3.3.4. A semi-structured discussion point list was compiled based on the trends identified from the online questionnaire such as skills requirements for a science journalist, mentorship, training, employment within the science engagement sector, and the interns' overall experience during their participation in the project. The facilitator-led the discussions and allowed the group to engage without interference, while the observer noted participant disposition throughout the process. The sessions were recorded and comprehensive field notes were compiled by both the facilitator and observer.

3.3.3. Field Research

Data collection methods that were used during the fieldwork stage included electronic surveys, telephonic interviews, and focus groups. The intention of adopting these data collection methods was not only to collect primary data but to explore key insights into the implementation of the programme against the objectives, the constraints experienced and to identify critical areas for programme improvement. Interviews, focus groups discussions and online survey questionnaires were, therefore, used to confirm, refute or extend the information gathered from the desktop research and to establish

new insights related to the study's objectives. The questionnaires identified key issues, whereas, the interviews and focus group discussions assisted in qualitatively exploring these key issues.

3.3.4. Sampling Methods

The sections below illustrate the sampling approach and the stakeholder consultations adopted in this study.

3.3.4.1. Sampling Methodology

The main method used in this impact study was simple random sampling. In random sampling, each person or organisation, also known as a unit, has an equal chance of being selected from the population. Laerd (2012)[1] proposes six steps to ensure random sampling is performed as effectively as possible. This includes defining the population size; choosing a sample from the population size defined; listing the individuals who will constitute the sample; assigning numbers to each unit; finding random numbers and selecting the sample.

3.3.4.2. Sample Size and Confidence Levels

With the random sampling chosen, it was expected that the approach would yield a confidence level of greater than 90% and a margin of error of 10%.

3.3.4.3. Sample Size

Table 1 below provides an indication of the sample size required for the different stakeholder types, based on a 90% confidence level and 10% margin of error, as well as the actual sample realised.

Stakeholder Type	Population Size	Representative Sample	Actual Sample	Confidence Interval	Margin of Error
YSTJ Interns	52	30	36	90%	10%
Host Community Media Organisations	35	24	29	90%	10%
Non-Host Community Media Organisations	17	12	9	90%	10%

Table 1: Required Sample Size for the YSTJ Impact Study

3.3.4.4. Stakeholder Consultations

The planned and actual stakeholders' consultations conducted are depicted in Table 2 below.

Stakeholder	Number of Planned Consultations	Actual Consultations
Focus Groups		
Interns	16	12
Surveys		
Interns	20	24
Media organisations	20	24
Interviews (Telephonic/Video-Conference)		
Interns	19	12
Host Media organisations	7	5
Total	**82**	**77**

Table 2: YSTJ Study Stakeholder Consultations

[1] For further information, refer to the following: http://dissertation.laerd.com/sampling-the-basics.php

The following sections provide further detail on the interns and community media organisations that participated in the study.

3.3.4.4.1. Intern Demographics

The main stakeholders for the YSTJ programme were the interns who participated in the programme. Between 2015/16 and 2017/18 more than 50 interns participated in the programme; however, for this impact assessment only 24 participated in the online questionnaire, 12 participated in the focus group discussions, whiles another 12 participated in in-depth telephonic interviews. Figure 6 below shows that out of the 24 interns that completed the online questionnaire, 12 started with the programme in 2016, one in 2017, and 11 in 2018. The largest proportion of the respondents formed part of the first intake in the 2015/2016 financial year.

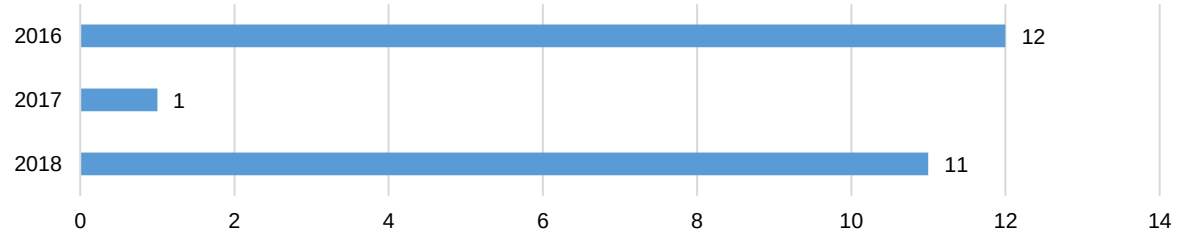


Figure 7: Intern Participation in the YSTJ Impact Study

Females dominated the participant population across all three data collection methods. Figure 8 below illustrates the gender distribution. It is, however, important to note that participants that were part of the focus group discussions were chosen from the group of interns that responded to the online survey and the telephonic interviews.

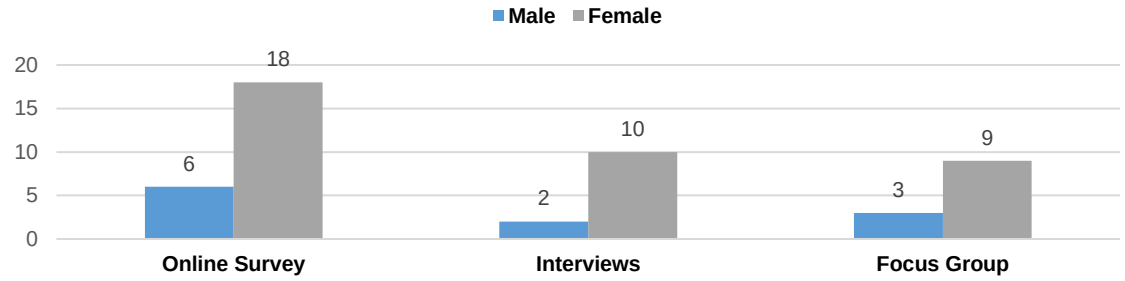


Figure 8: Gender Distribution of Intern Participation in the YSTJ Impact Study

Figure 9 below shows that the greatest proportion of intern respondents for the online survey was based in Limpopo (29%) and KwaZulu-Natal (29%), followed by the North West (17%). There was no participation from Free State and Western Cape.

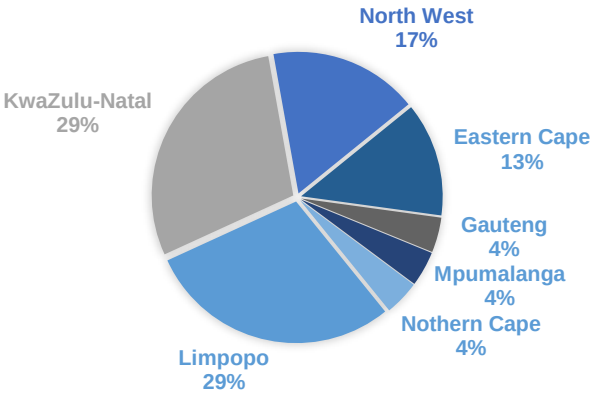


Figure 9: Geographical Spread of Interns in the YSTJ Study

The qualifications of the interns held at the time of entering the programme, varied amongst the recruited interns. Figure 10 below shows that the greatest proportion (46%) of the respondents, held an undergraduate qualification when they started with the programme. Of the other respondents, 33% had an honours qualification, while the remaining 21% had a postgraduate qualification.

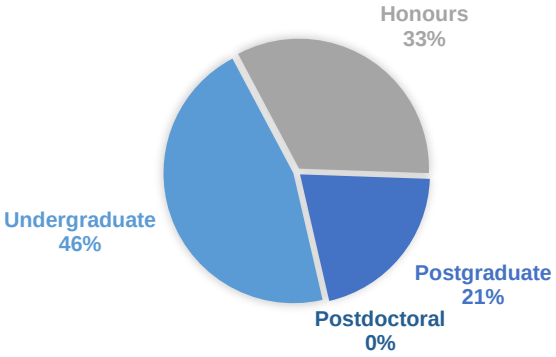


Figure 10: Qualifications of the Interns in the YSTJ Impact Study

The interns that participated in the programme majored in different study fields, ranging from sciences to journalism and communications. Figure 10 below indicates that the majority of respondents (92%) had completed their studies in media, journalism, and communication-related fields.

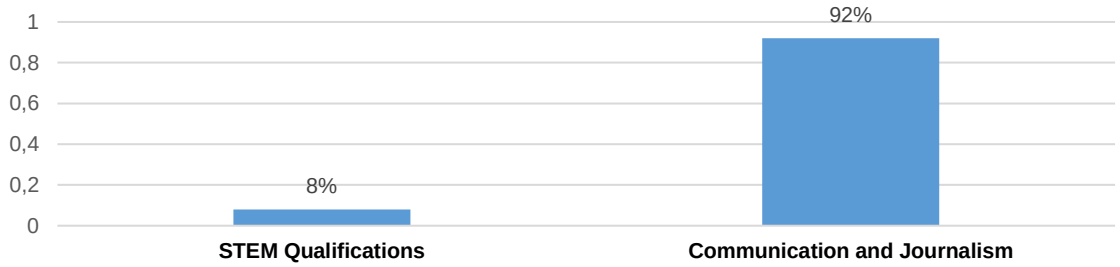


Figure 11: Study Fields of the Interns in the YSTJ Impact Study

3.3.4.4.2. Media Organisations Demographics (Host and Non-Host)

In total, 24 community media organisations participated in the survey. Of the media organisations that participated, 9 were not part of the community media organisations that hosted YSTJ interns, whilst 15 were part of the programme. In addition, 5 host media organisations were engaged in interviews, increasing the total sample to 29. This is highlighted in Figures 12 to 15.

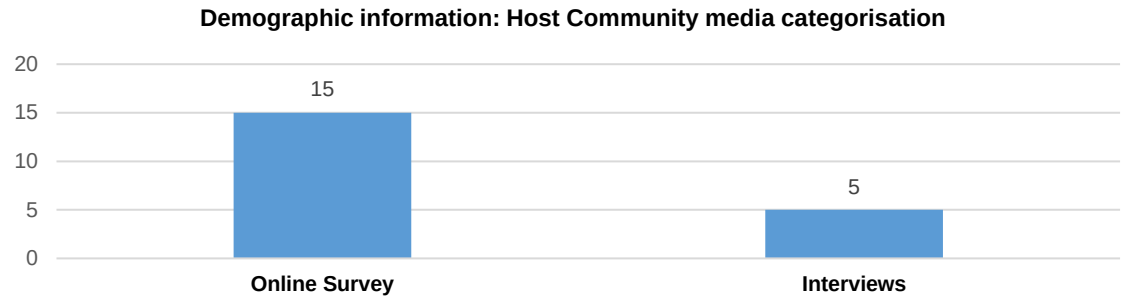


Figure 72: Host Community Media Organisations Participation in YSTJ Impact Study

Although the programme focuses on the traditional community media organisations, such as print and broadcast, there was also participation from digital media organisations. In addition to the host-community media organisations, 9 non-host community media organisations participated in the survey. Out of the 9 non-host community media organisations that completed the questionnaire, 6 were community radio stations, 1 was a newspaper, and 2 were digital radio stations. This is reflected in Figure 13 below.

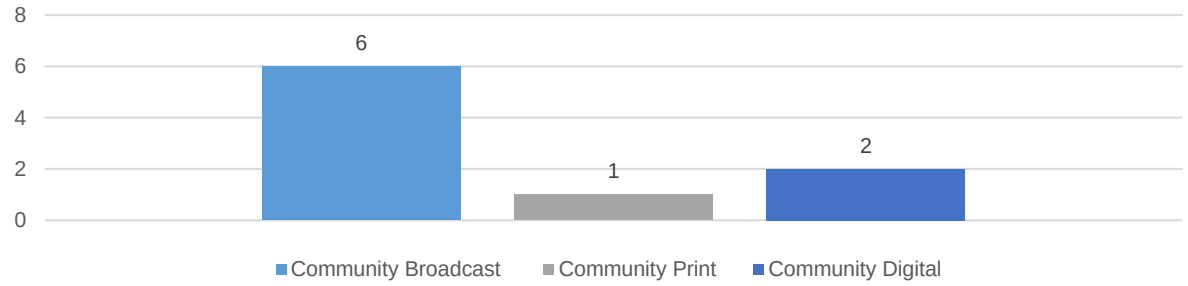


Figure 13: Type of non-host community media organisations that participated in the YSTJ study

Figure 14 below shows that Community Media Organisation participation grew from 10 in 2015/16 to 19 in 2017/18.

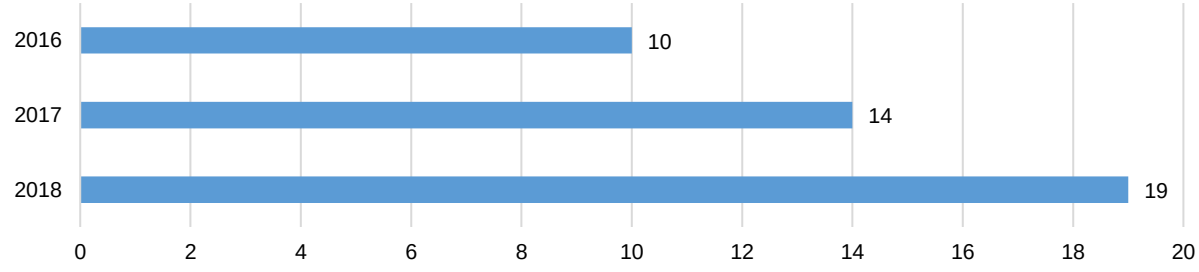


Figure 84: Community Media Outlet Participation in the YSTJ programme

The distribution of community media outlets across provinces is reflected in Figure 15 below. It is indicative that the greatest proportion of host community media organisations respondents are based in Limpopo (36%), followed by Gauteng (15%), KwaZulu-Natal (14%), and Mpumalanga (14%). There was no participation from the Free State or the Western Cape.

On the other hand, Figure 16 shows that the greatest proportion of non-host community media organisations respondents are based in Limpopo (23%), the Western Cape (22%), and Mpumalanga

(22%). There were no non-host media organisations in the Northern Cape, Free State, and KwaZulu-Natal that participated in the study.

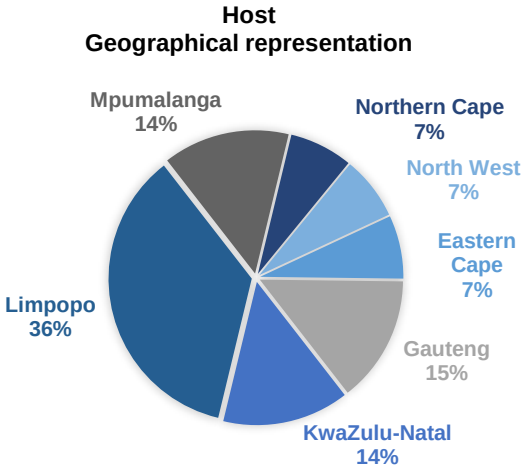


Figure 15: Geographical Spread of Host Media Houses

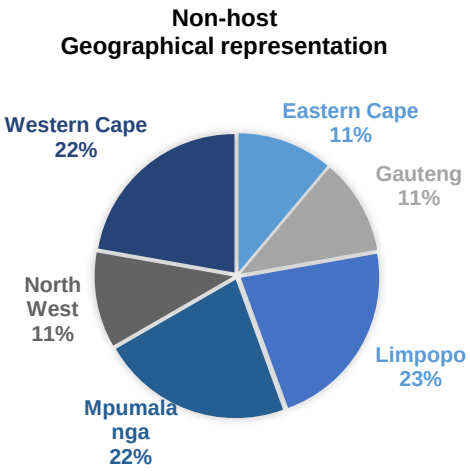


Figure 16: Geographical Spread of Non-Host Media Houses

Of the non-host community media organisations that participated in the study, all respondents indicated that they would be interested in participating in science journalism workshops. They also expressed an interest in hosting science journalism interns given an opportunity.

3.4. Ethics

When conducting the research, SAASTA followed the code of conduct set out by the Market Research Society. To further ensure alignment with research ethics, SAASTA used an external service provider to independently formulate the questions for the study. Qualified and experienced individuals were carefully selected to conduct the fieldwork and subsequent data analysis. These researchers, while familiar with the YSTJ Programme, also worked very closely with the Science Communication division where this programme resides to ensure that the impact study produce relevant and useful results findings.

SAASTA explained the purpose of the study, its potential risks, and its benefits to all prospective participants before commencing the data collection process. The participants were provided with assurance that the study would be anonymous. The identity of the survey participants was kept strictly confidential and no identity of the participants has or will be shared with any person not authorised to view it. Respondents were told that they could exit the survey at any point. There were no withdrawals from the participants who commenced with the surveys, interviews, and/or focus group discussions.

3.5. Data Analysis

The data analysis approach was geared towards providing insightful findings through a structured analysis of the data collected and presented in an easy-to-understand format through appropriate visualisations. To ensure that the impact study's results were as robust as possible, the data triangulation process was used as part of data analysis for this study. The survey responses were analysed more quantitatively, while interviews and focus groups were leveraged to qualitatively provide in-depth data in the findings. The next sections outline the approach for data analysis.

3.5.1. Quantitative Data

The analysis of quantitative data includes calculations and depicts findings using graphs and conceptual models. Data was qualified based on the percentage of responses per question per option. The questions within the survey were predominantly based on a 5-point Likert scale, with 5 denoting the most positive response and 1 indicating the most negative response. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 1997). An example of a 5-point Likert scale is the scale used to measure the extent of achievement of a result or activity, ranging from "not at all" to "extensively" achieved. The reason for choosing such a rating system is because responses are easily quantifiable and amenable to the computation of some mathematical analysis (LaMarca, 2011).

Survey questions were developed using the Results Chain[2] as a key starting point, allowing them to be mapped back to the Results Chain during the analysis of the data. Colour coding was used to indicate the extent to which Results Chain components were realised, these colours were based on the results from the survey data.

The rating scale below indicates the ratings used when illustrating the extent to which the Results Chain components are realised. Areas highlighted in dark green have been assessed as exemplary, light green has been assessed as met, areas highlighted in amber have been assessed as partially met and areas highlighted in red have been assessed as not met. Figure 17 below outlines this rating scale.

Figure 9: Results Chain Scale

The percentage in the scale above indicates, for each component of the results chain, the percentage of positive responses received (i.e., people who selected 'Significantly', 'Substantially' or 'Extensively') out of the total number of respondents for that question. Where applicable, the rating scale was adjusted to assess the ratings ('Significantly, 'Substantially' or 'Extensively') as negative, instead of positive, (i.e., if 85% of respondents selected 'Significantly', 'Substantially' or 'Extensively', this would be assessed as not met). The nature of the questions, which were mapped to the results chain, indicated whether a component needed to be assessed positively or negatively.

3.5.2. Qualitative Data

The analysis of qualitative data involved selecting key comments made by participants during one-on-one interviews, focus groups, and from narratives extracted from online responses. These comments were analysed to argue and corroborate the views from quantitative data collected with secondary data for the formulation of the findings, limitations, and recommendations in this report.

3.6. Limitations for the Study

The research team experienced various challenges throughout the process of completing the study. This entails delays in data collection as a result of the COVID-19 national lockdown between March and

[2] See section 3.2 for an introduction to the Results Chain.

August 2020. Due to travel restrictions, the team was unable to travel to various provinces for data collection. To remedy the situation, face-to-face interviews were converted to telephonic/video-conference interviews. With regard to the focus group discussions, there were challenges with connectivity, which limited the use of online platforms such as Zoom. Other challenges experienced during the study included the fact that some previous interns were not reachable, whilst others decided not to participate in the study despite repeated invitations. Despite these limitations, the research team is of the view that these did not compromise the findings in this report due to the fair number of responses received and active participation during focus group discussions.

4. Evaluation of the Findings

This section presents the evaluation findings of the study. Consideration was given to the internationally recognised Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) evaluation criteria, which is used to measure the success of developmental programmes and projects. The criteria focus on; Project Efficiency, Effectiveness, and Impact. This criterion was, therefore, used for this study, to assess whether the objectives of the YSTJ programme, as outlined in Figure 18 below, were achieved as outlined.

Figure 10: YSTJ programme objectives

According to OECD (2018), efficiency measures the outputs of a project, qualitatively or qualitatively, in relation to the inputs that resulted from the project's activities. As defined, efficiency is measured by the extent to which inputs are translated into outputs. Efficiency also takes into consideration whether the project was implemented in the most efficient and timely ways to achieve the set objectives. To measure the efficiency of the programme, the project activities, as derived from the results chain, were assessed.

Project effectiveness focuses on measuring the extent to which a project has achieved its objectives, mainly by comparing the progress before and after the intervention. Effectiveness is measured by the degree to which a process or activity is successful in producing the desired result or impact. To evaluate the effectiveness of the programme, the extent of delivery against the outputs and outcomes were measured.

Project impact focuses on the positive or negative changes that occur as a result of the programme, either directly or indirectly (OECD, 2018).

In addition, the evaluation sought to establish the overall experience of the participants; focusing on the YSTJ programme areas that worked well and those that require improvement.

4.1. Summary of the Findings

The following diagram depicts the summary findings for the evaluation, as documented in the evaluation framework.

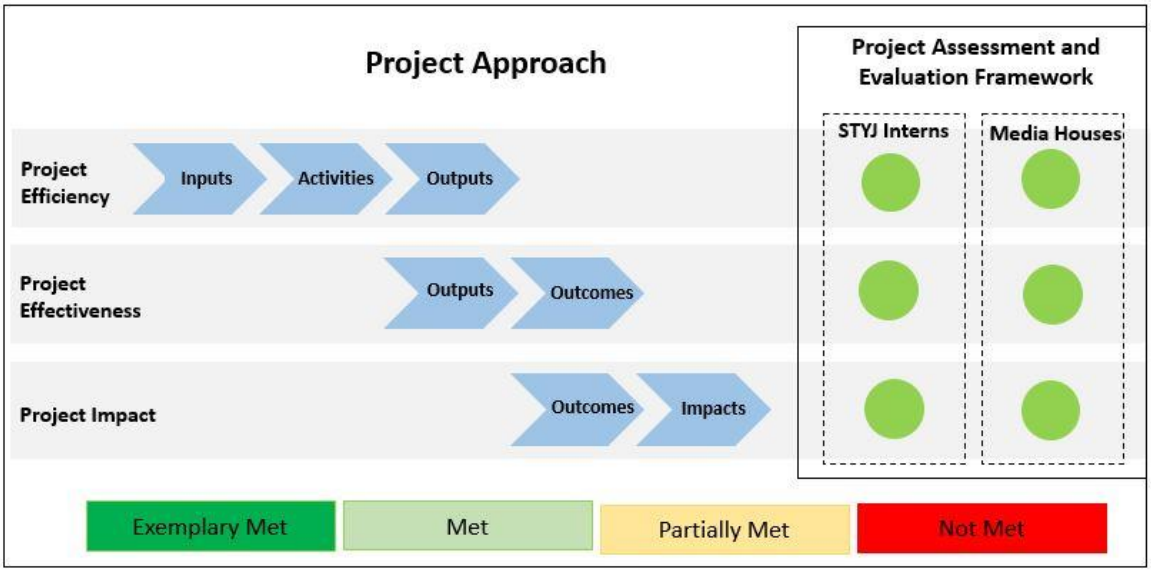


Figure 11: Summary of Findings for the Evaluation Study

The first component of the evaluation focused mainly on the efficiency of the activities that were implemented as part of the YSTJ programme. These activities were divided between those related to the beneficiaries of the programme (i.e. the interns) and the community media organisations that participated in the programme. As indicated in the figure above, project efficiency, project effectiveness, and project impact all achieved ratings of met.

4.1.1. Objective 1: Summary Evaluation

4.1.1.1. Project Efficiency

Figure 19 below depicts the 12 activities that were conducted as part of Objective 1. Based on the findings, 10 activities were successfully conducted and thus received a rating of met, whereas, two activities received a rating of partially met. These resulted in one output being rated as partially met, six outputs being rated as met, and two outputs being rated as exemplary.

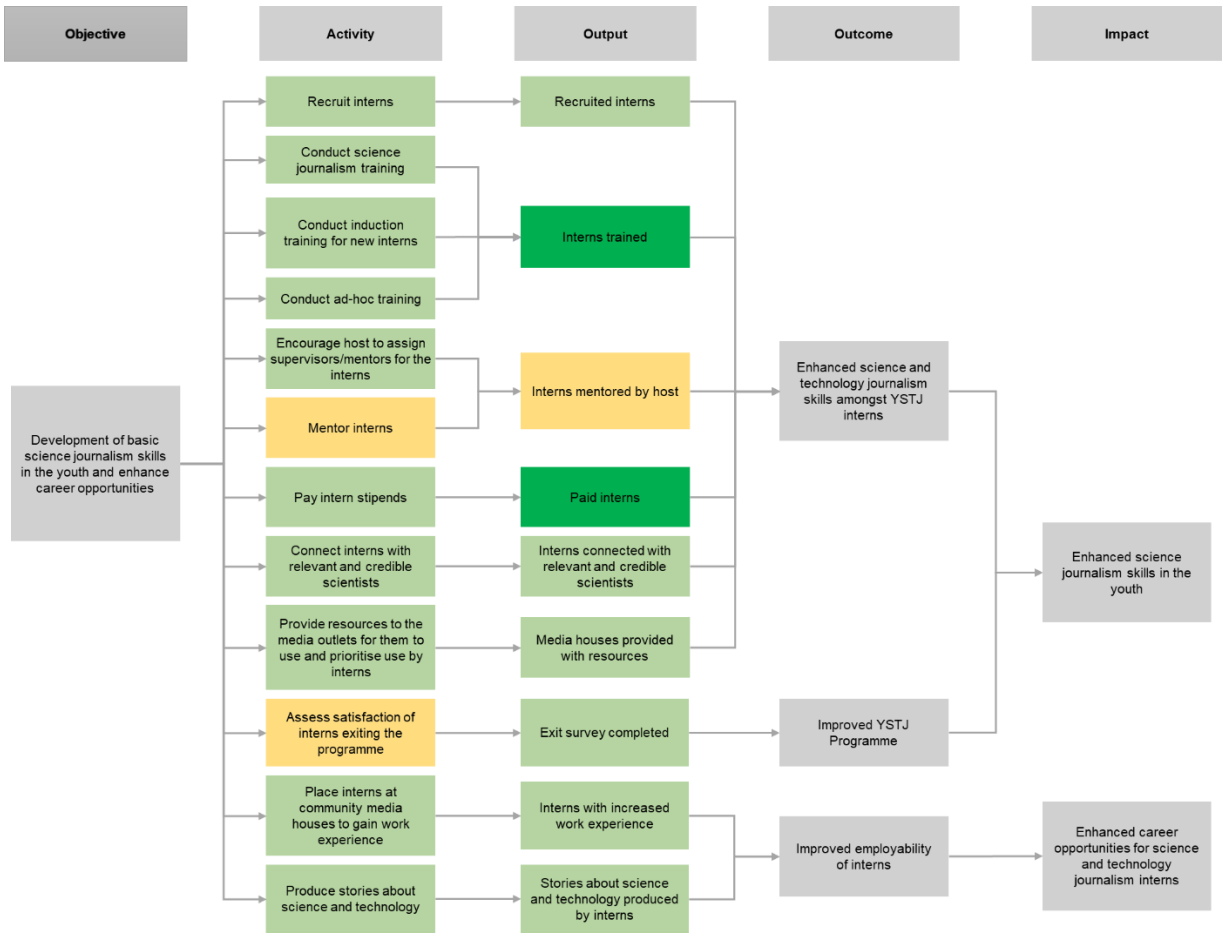


Figure 12: Result Chain Outcome of Objective 1: Efficiency in Development of Basic Science Journalism Skills in the Youth and Enhanced Career Opportunities

The analysis shows that interns were efficiently recruited in line with the programme targets on an annual basis and therefore received a rating of met.

The training of interns was not only perceived as efficient but also appeared to add significant value for the interns. This sentiment was echoed by the host media participants, who indicated that there was a notable development in fields such as; technical editing, research, protocol management, people management, and presentation and facilitation skills as unintended results of the programme. The activities and output related to training interns, therefore, received ratings of met and exemplary, respectively.

The availability and assigning of mentors were rated as partially met. Findings indicated that the role of mentors was misconstrued with the management and/or supervision role. This reduced the value of the mentorship for the participants significantly and resulted in a partially met finding for the output. Therefore, interns appeared not to be efficiently mentored, with several areas for improvement being identified.

The process of allocating and paying intern stipends received a rating of met. Similarly, providing working resources was found to be efficient. However, it was noted that the participants did not prioritise the production of these resources for their use. Thus, indicating room for improvement.

In terms of exposing the interns to the industry to facilitate networking, findings indicated that participants were provided with access to industry experts and derived value in the process – thus resulting in this output receiving a rating of met. Interns were efficiently connected with industry experts with no overt areas for improvement identified.

Findings indicated that the assessment of interns on exit from the programme was conducted efficiently, however, it was found that participants would have preferred consistent assessments being conducted during the internship. However, in instances where satisfaction was assessed and key areas for improvement were identified, the programme responded with the relevant improvements. Whilst the output received a rating of met, it was noted that the activity related to assessing interns' satisfaction required improvement.

In terms of placing interns at community media organisations to gain work experience, findings indicated that both the intern participants and host media participants felt this activity was conducted efficiently. Overall, the output received a rating of met, indicating that interns efficiently increased work experience with no overt areas for improvement identified.

It was found that stories on science and technology were efficiently produced by the interns, this was supported by the increase of science media produced by the host media participants. This resulted in the output receiving a rating of met, with no overt areas for improvement being identified.

4.1.1.2. Project Effectiveness

For objective 1, nine outputs and three outcomes were assessed. As can be seen in the figure below, one output was partially met, six outputs were met, and two outputs were exemplary. Additionally, all outcomes received ratings of met.

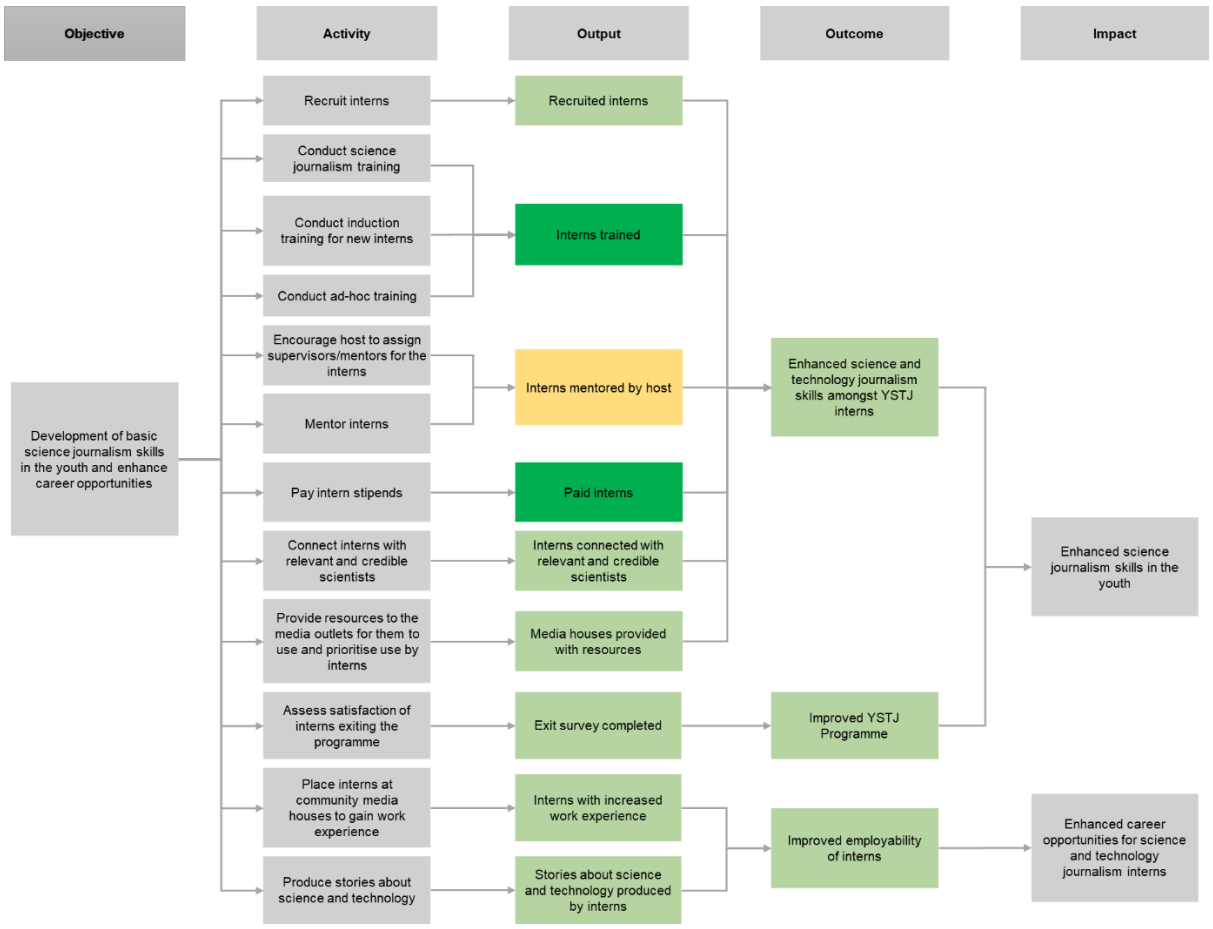


Figure 13: Result Chain Outcome of Objective 1: Effectiveness in Development of Basic Science Journalism Skills in the Youth and Enhanced Career Opportunities

As can be seen in the figure above, outcome 1, enhanced science and technology journalism skills among YSTJ interns, received a rating of met. Findings indicated that this outcome could have been improved if mentorship was conducted more efficiently. The mentoring of interns was identified as a key area for improvement, requiring significant review and intervention. It is universally understood that mentors are not responsible for the day-to-day management of a mentee but rather for their growth and development through support, teaching, and knowledge-sharing. In practice this did not appear to be consistently understood, nor applied. This resulted in a split between positive and negative experiences, ranging from the complete absence of mentors to mentorship that extended past the end of the hosting term, however, overall it was found that the negative experiences reduced the value of the programme and the skills development and/or enhancement for the interns significantly. Although mentorship seems to be lagging, the findings indicated that the recruitment of interns and the provision of training and resources contributed positively to the skills development and/or enhancement of interns. Therefore, it can be stated that the programme was effective in enhancing science and technology journalism skills among YSTJ interns.

With regard to outcome 2, an improved YSTJ programme, it was found that the questionnaires were completed and provided the programme with valuable information for possible programme improvements based on the suggestions and/or challenges experienced by interns. The analysis also revealed that the programme responded efficiently and timeously to institute improvements that were

appropriately aligned to emerging risks or dissatisfaction. Therefore, it can be found that this outcome was in line with the objectives set for the programme and therefore, received a rating of met.

In terms of outcome 3, improved employability of the interns, it was found that interns were able to generate significant science and technology stories/content. Additionally, it was found that interns gained definite value from the increased work experience, with a systematic improvement in work conduct and output being noted by the hosts during the hosting term. This experience may provide them with a competitive advantage over their peers. However, it also emerged that some interns struggle to find employment within the niche field of science journalism after exiting the programme. The perceptions are that the hosting term is too short to generate a sufficient track record that would stimulate increased employability. That being said, in most instances alternative employment was secured through freelancing and/or other journalism and/or communication fields. Therefore, it can be found that this outcome may be considered met, with some areas for improvement.

4.1.1.3. Project Impact

For objective 1, three outcomes had to be achieved to effectively contribute to two broad impacts. Based on the findings, the three outcomes were met resulting in positive results with regard to the impact of the programme.

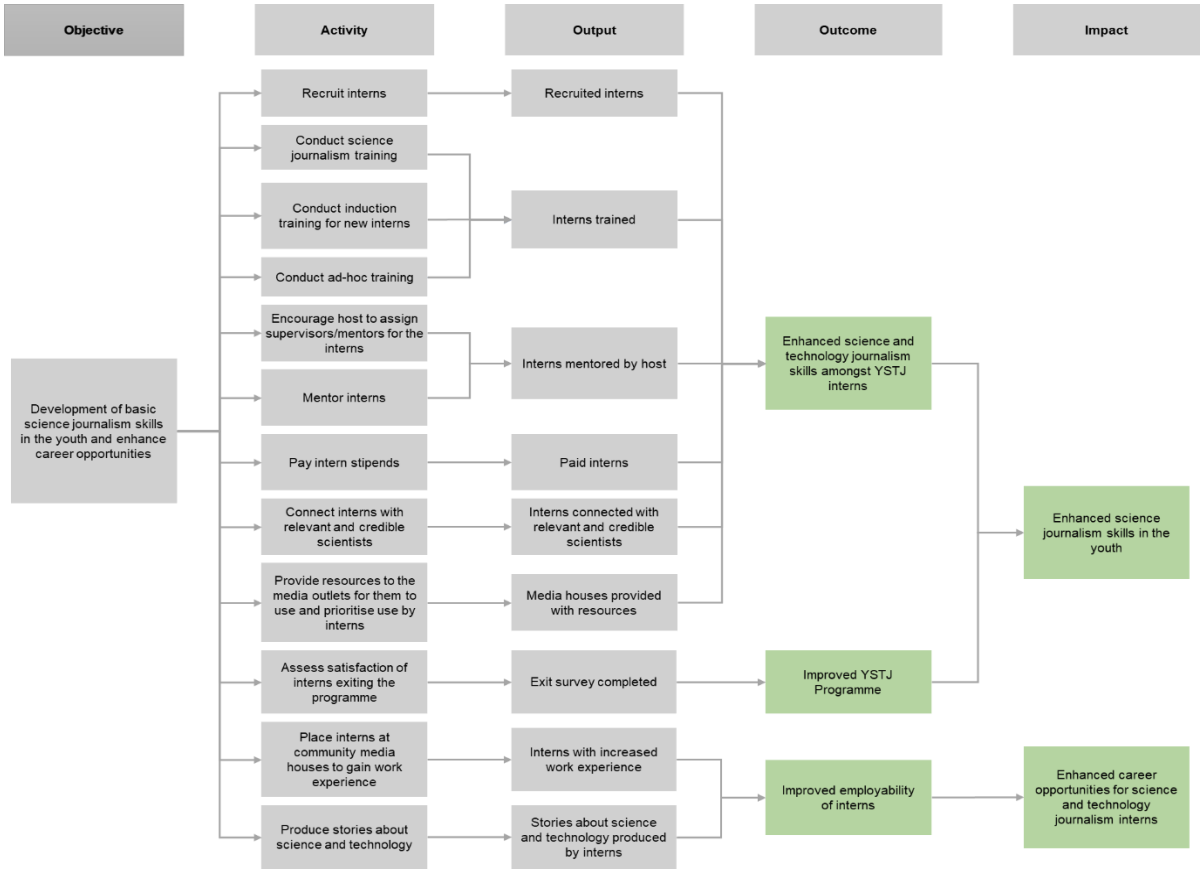


Figure 14: Result Chain Outcome of Objective 1: Impact in Development of Basic Science Journalism Skills in the Youth and Enhanced Career Opportunities

It was noted that the programme was effective in enhancing science and technology journalism skills among YSTJ interns. As indicated in the figures below both the host media organisations, as well as the interns shared the view that the programme is making strides towards enhancing science and

technology journalism skills in the youth. What was outstanding as well is that the host media organisations felt that the programme increased work experience for interns.

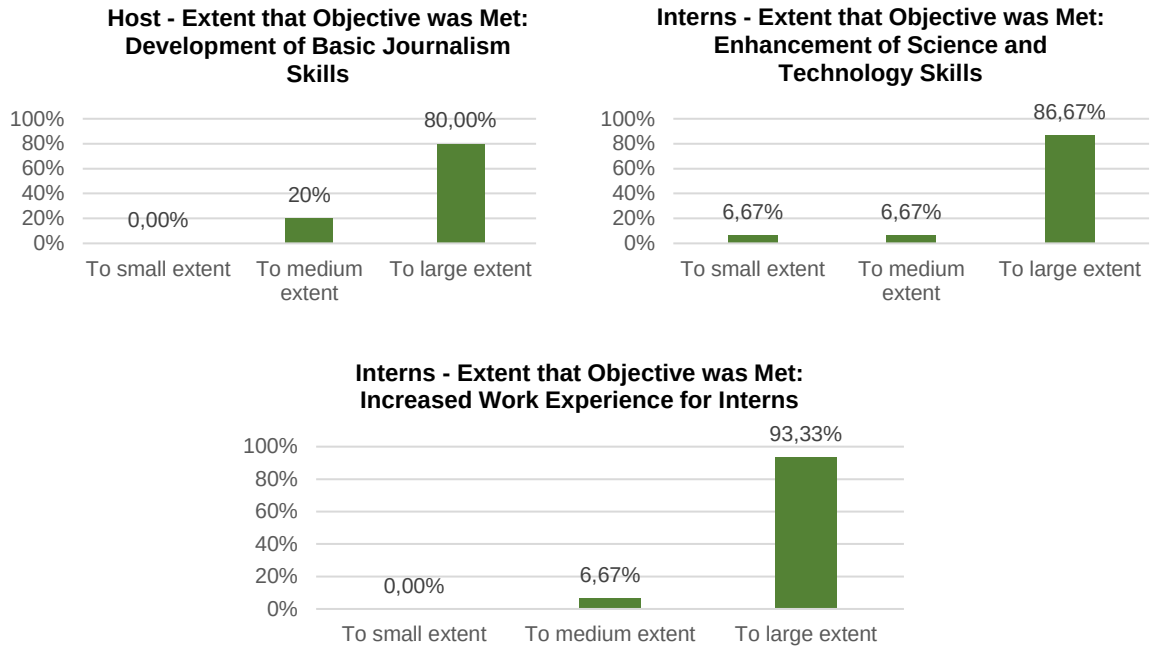


Figure 15: Host and Intern Perception Regarding Enhanced Science Journalism Skills in the Youth

Even though the enhancement of career opportunities for science and technology youth journalism interns received a rating of met, there was a divergence of views between the media organisations and interns, as indicated in figure 23 below. More so with varying responses from interns.

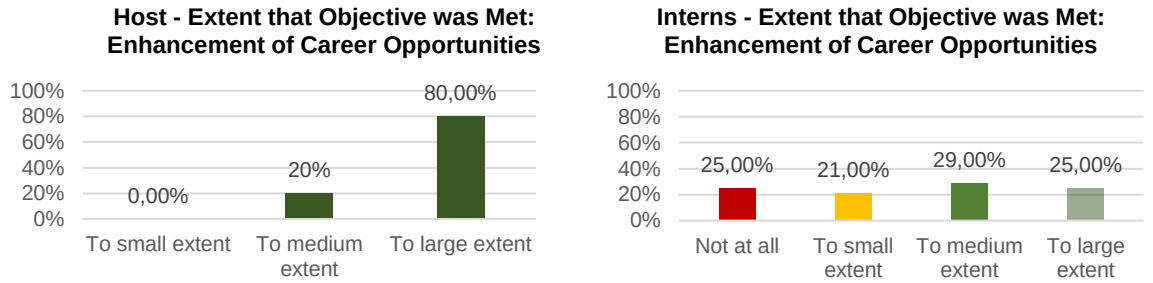


Figure 16: Host and Intern Perception Regarding Enhanced Career Opportunities

It was noted that whilst the programme was effective in improving the employability of the interns and, thus, enhanced career opportunities for the interns, the opportunities presented were not necessarily in the field of science journalism. That being said, it was found that the programme contributed to creating full-time career opportunities for the science and technology journalism interns in some of the host media organisations.

Figure 24 below as well as enhancing career opportunities for science and technology youth journalism interns to a lesser extent, considering their views as ranging between 20% and 33%.

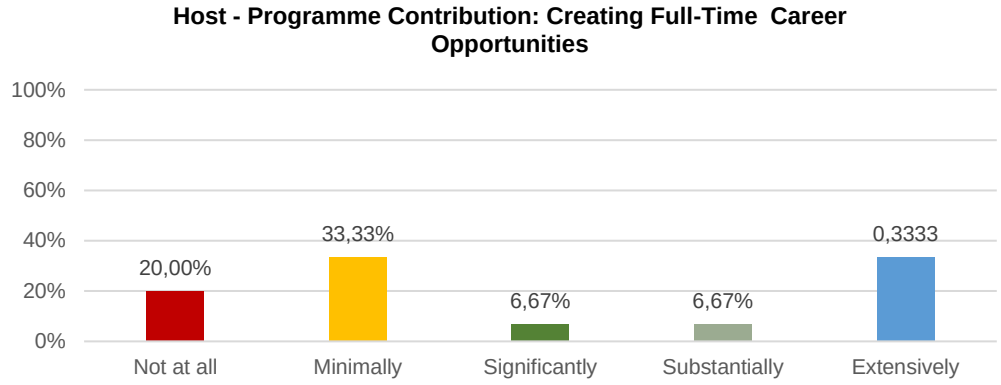


Figure 17: Host Perception regarding Career Opportunities

Overall, the programme resulted in a positive change, both intended and unintended, and thus, had a considerable impact in improving science journalism skills amongst the youth, as well as enhancing career opportunities for science and technology youth journalism interns to a lesser extent.

4.1.2. Objective 2: Summary Evaluation

4.1.2.1. Project Efficiency

Of the four activities related to objective 2, three were met, whilst one was partially met, as outlined in Figure 25 below.

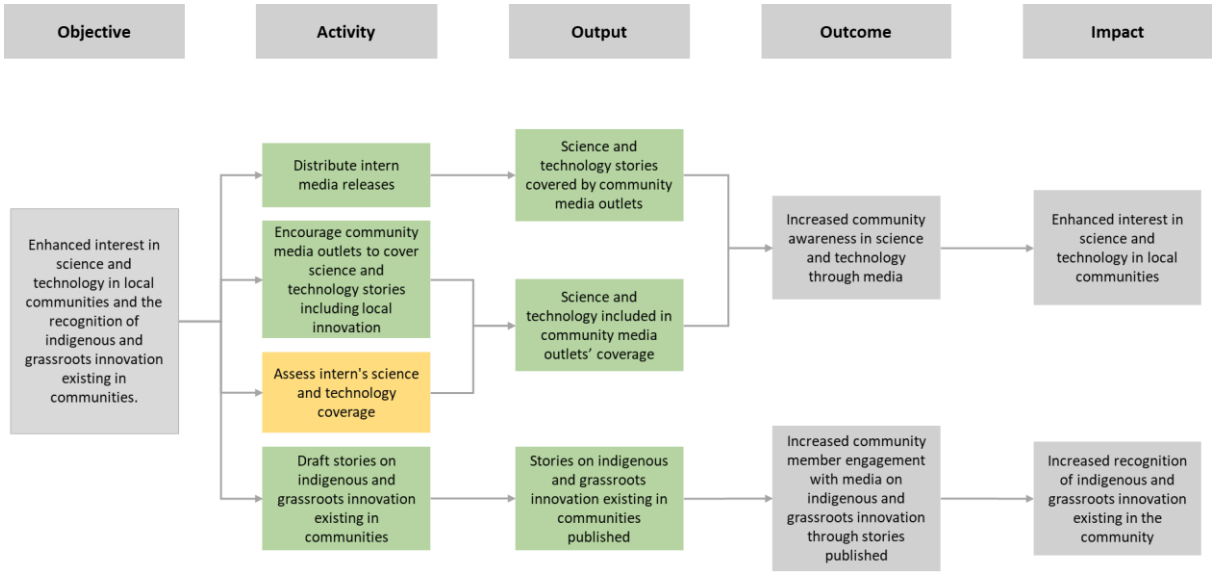


Figure 18: Results Chain Outcome of Objective 2 – Efficiency in Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities

Based on actual counts, it was found that science and technology stories, including stories focusing on indigenous and grassroots innovation, were produced by the interns, this activity, therefore, received a rating of met. Additionally, media organisations included the produced media in their coverage to a large extent and at a high frequency. With regard to the assessment of the interns' science and technology coverage, a disjunction was noted. According to one group, the media was mostly assessed, whereas, findings from another group indicated that the assessment of the media was severely lacking. Although

the process appears somewhat inefficient, findings indicated that the media was generally scientifically correct and error-free. This activity, therefore, received a rating of partially met.

4.1.2.2. Project Effectiveness

For objective 2, three outputs had to be achieved to effectively produce the intended outcomes. Based on the findings, all outputs were met, translating into the two outcomes being met.

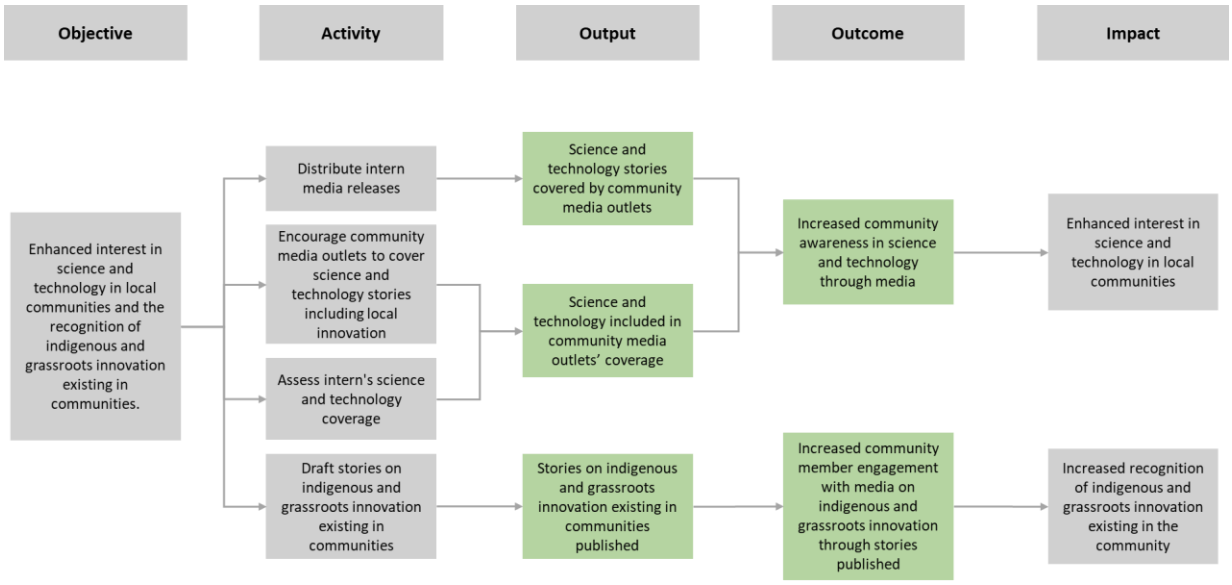


Figure 19: Results Chain Outcome of Objective 2 – Effectiveness in Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities

The outcome related to increased community awareness in science and technology through the media was met, meaning this objective was achieved. Interns were expected to produce stories on science, technology, and local innovation as part of the internship. This resulted in at least 1 348 science and technology stories being included in community media coverage. In addition, the coverage of science and technology stories increased from an average of 1-10 to an average of 21-30 monthly publications and/or broadcasts for the majority of the host community media organisations.

Additionally, it was explicitly stated by the majority of the host community media outlets that the programme increased community awareness by encouraging public engagement on the topics published or broadcasted. In some instances, it even stimulated inquiries about the fields of sciences and technology by the public, especially youth. Therefore, it can be found that the programme was effective in increasing community awareness of science and technology through the media.

Engagement by community members with media on indigenous and grassroots innovation through stories published was found to have been met. Interns were able to produce stories on local innovation frequently which was, frequently included in the community media coverage. Due to the significant increase in public engagement in published science stories, it can be stated that enhanced interest in science and technology in local communities and the recognition of indigenous and grassroots innovation were effective.

4.1.2.3. *Project Impact*

For objective 2, two broader impacts were identified. Based on the findings, these two impacts were rated as met.

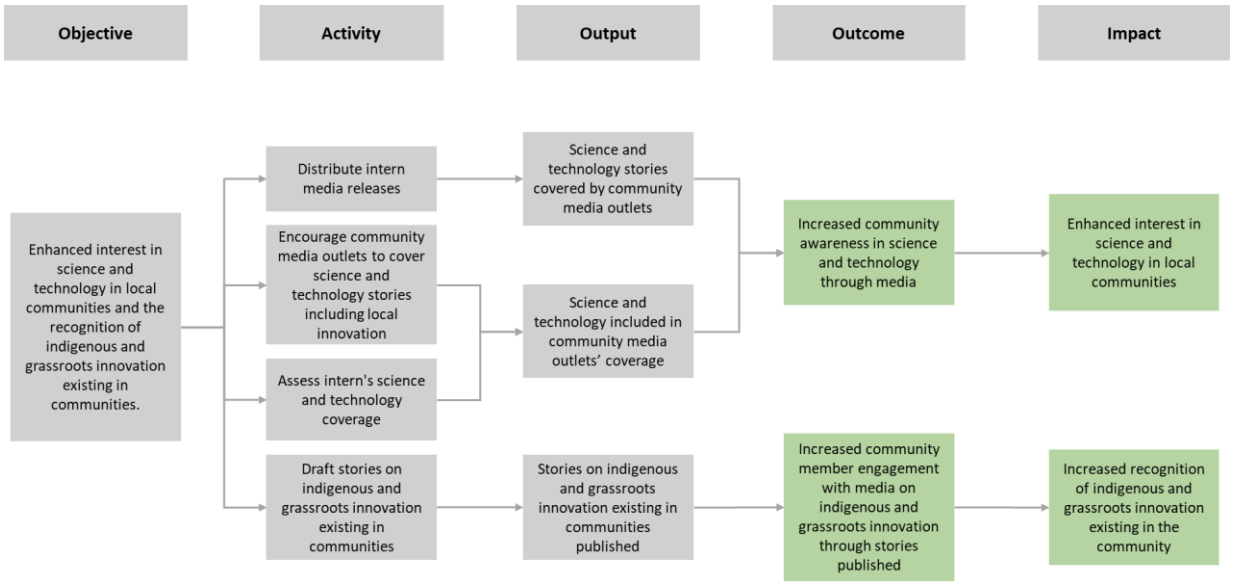


Figure 20: Results Chain Outcome of Objective 2 – Impact in Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities

It was noted that the programme was effective in increasing community awareness of science and technology through media. In addition to the outcomes being met, the figures below indicate that both the host media organisations, as well as the interns, shared the opinion that the programme enhanced interest in science and technology in local communities.

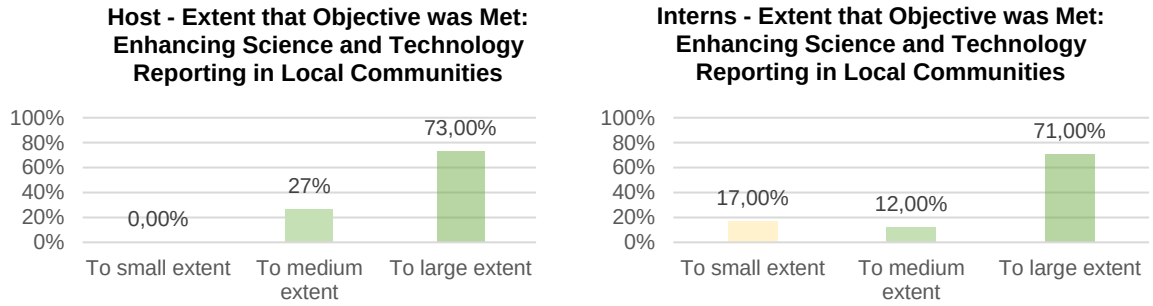


Figure 21: Host and intern perception on meeting outcome 3

In addition, the host media organisations indicated that the programme also contributed extensively to the enhanced interest in science and technology in local communities.

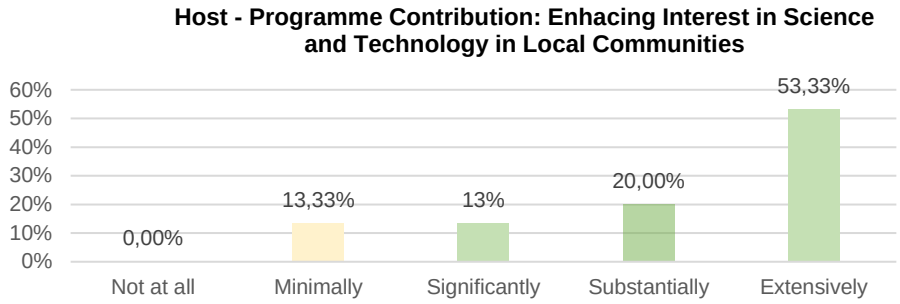


Figure 22: Host Perception Regarding Enhanced Interest in Science and Technology

Therefore, it can be stated that the programme contributed to the broader impact of enhancing interest in science and technology in local communities.

In addition to the enhanced interest in science and technology in local communities, the programme also focused on increasing the recognition of indigenous and grassroots innovation that already exists in communities. In addition to the outcome being met, the figures below indicate that both the host media organisations, as well as the interns, attested that the programme had contributed to enhancing the recognition of local innovation to a large extent.

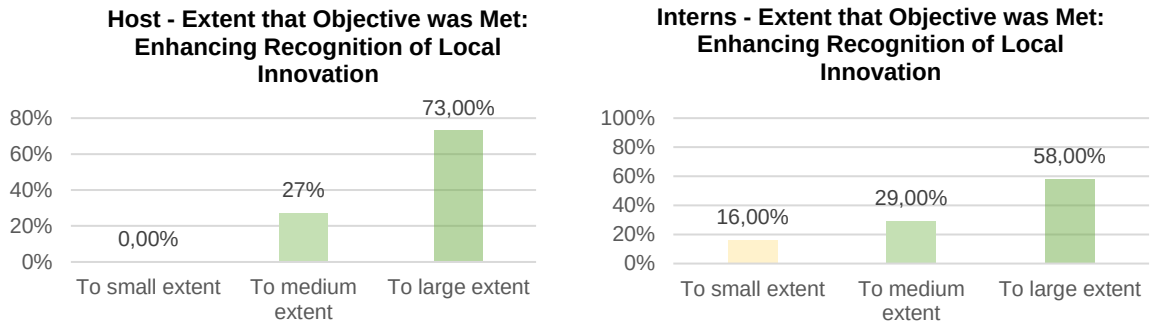


Figure 23: Host and Intern Perception Regarding Enhanced Recognition of Local Innovation

The host media organisations also indicated that the programme contributed to a large extent in the recognition of indigenous and grassroots innovation in local communities.

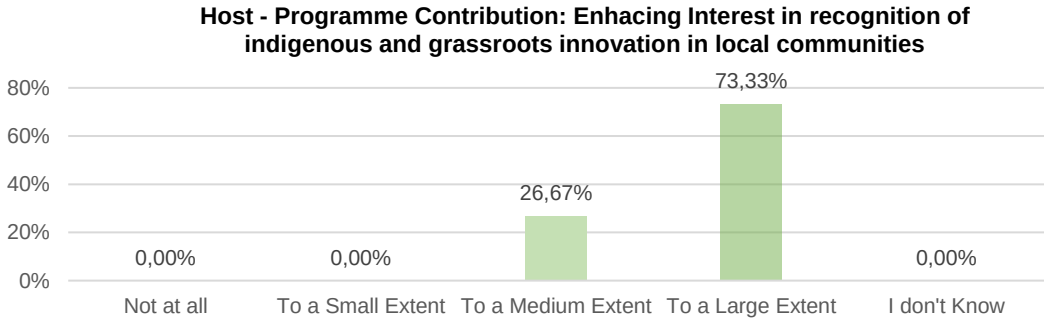


Figure 24: Host perception on programme contribution

Therefore, it can be stated that this objective contributed to the broader impact of enhancing recognition of indigenous and grassroots innovation that already exists in communities.

Overall, the programme resulted in a positive change and thus, had an impact in enhancing interest in science and technology in local communities, as well as the recognition of local innovation.

4.1.3. Objective 3: Summary Evaluation

4.1.3.1. Project Efficiency

Objective 3 contained ten activities which translated to four outputs. Based on the findings, nine of these activities received ratings of met, except for one activity, which was rated as partially met. These resulted in three of the four outputs being rated as met, and one of the outputs being rated as partially met, as per Figure 32 below.

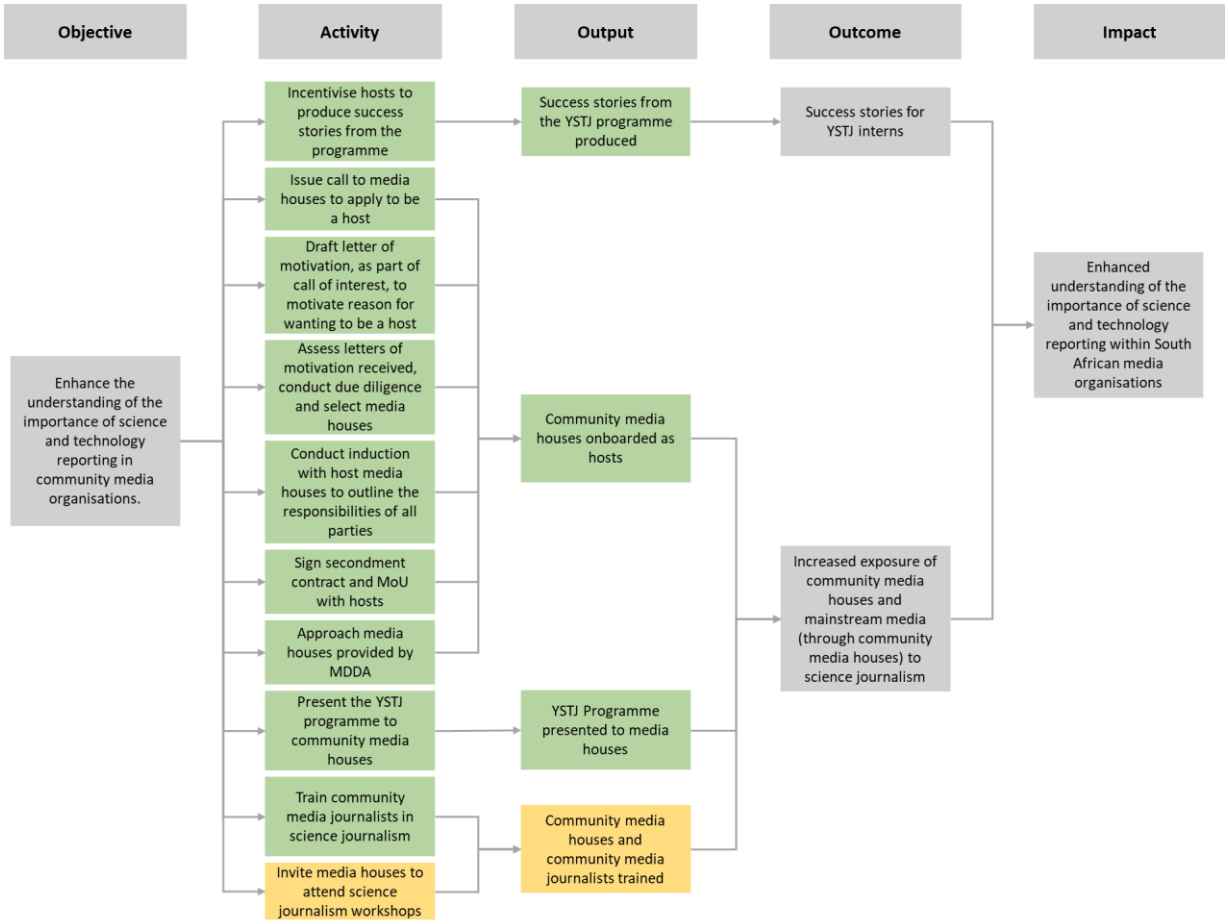


Figure 25: Results Chain Outcome of Objective 3 – Efficiency in Enhancing the Understanding of the Importance of Science and Technology Reporting in Community Media Organisations

With regard to the on-boarding of the host media organisations and the presentation of the YSTJ programme, several contributing activities were evaluated and found to be efficient. This resulted in a met findings for these outputs with no overt areas for improvement noted.

The activity of training of media organisations and community media journalists was rated as partially met, with findings indicating that the value was somewhat muted. In addition, non-host media organisations were excluded from the process and only a low proportion had knowledge of or attended training that was made available to both host and non-host media organisations. As can be seen in the figure above, the activity related to distributing invites to media organisations to attend science journalism workshops was found to be partially met. This may indicate that awareness of these

initiatives is lacking, thus resulting in less trained media organisations and media journalists and therefore, a partially met rating for the related output. Therefore, the process of training and inviting community media organisations and journalists was found to be partially efficient, with the need for improvement in some areas.

Overall, host media organisations were engaged and, efficiently incentivised through the provision of resources, however, there were varying views regarding the support provided, as opposed to the support required from SAASTA as part of incentivising the host community media organisations. With this finding, it is likely that communication has been ineffective on both sides.

4.1.3.2. Project Effectiveness

For objective 3, four outputs had to be achieved effectively to achieve the two intended outcomes. Based on the findings, three outputs were met whilst one was partially met, leading to the outcomes being met.

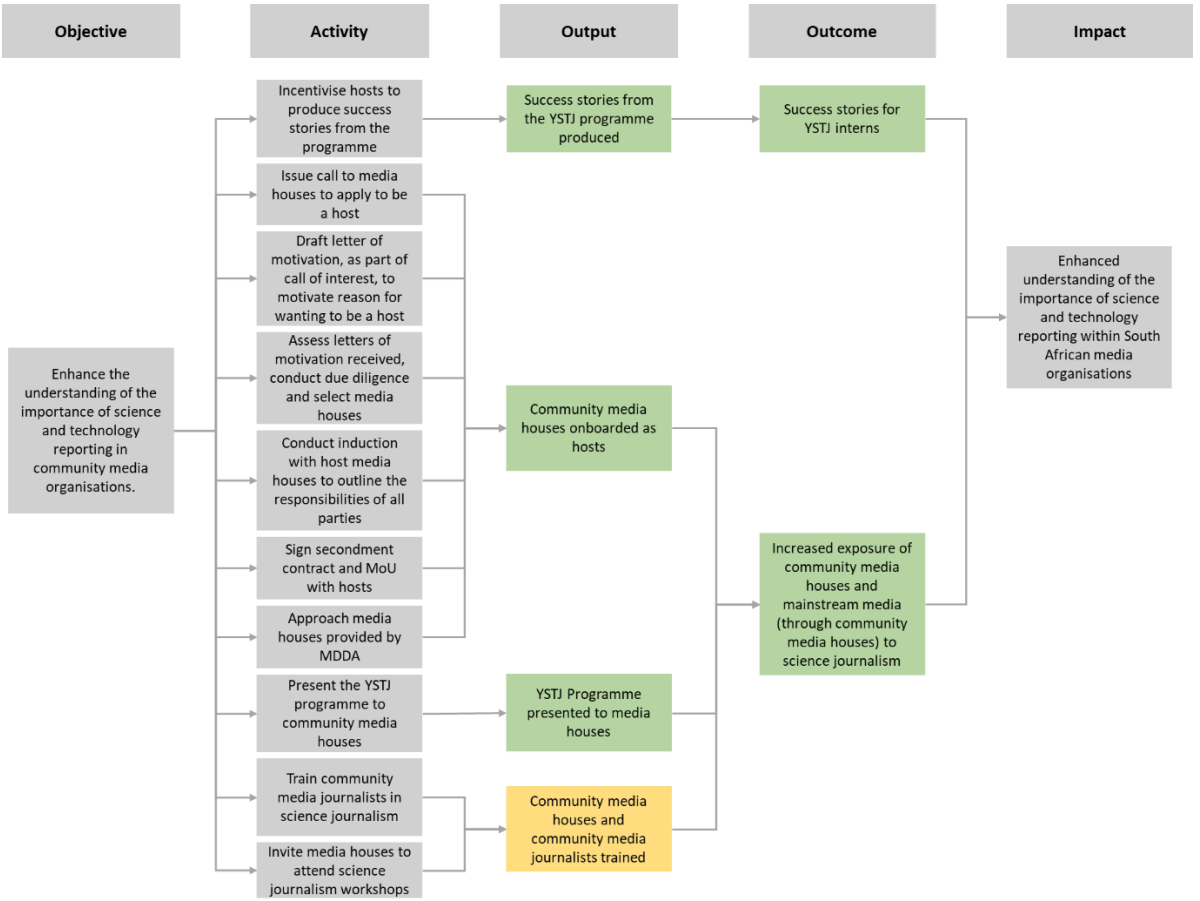


Figure 26: Results Chain Outcome of Objective 3 – Effectiveness in Enhancing the Understanding of the Importance of Science and Technology Reporting in Community Media Organisations

The science and technology stories produced from the YSTJ programme led to the programme being considered a success story, thus the objective was found to have been effective. That being said, the placement of interns and provision of resources enabled an increase in the coverage and output for a variety of media streams and host media organisations, specifically without the need for additional resourcing and compensation. Therefore, it can be confidently stated that to some extent the objective was achieved because success stories for YSTJ interns were generated.

With regard to the outcome, increased exposure of community media organisations and mainstream media to science journalism, findings indicated that this outcome was met and thus effective. The community media organisations generally rated the on-boarding process highly. Although significant value was derived from the induction of the host media organisations, there were varying views from the interns regarding whether the responsibilities of the host media organisations during the hosting term is clear or effective. Although this does not directly affect the outcome in context, it does highlight an emerging risk.

In addition, it is clear that the programme was efficiently and effectively presented to host community organisations, however, the awareness in non-host community media organisations still appears to be relatively low with the majority of the non-host community media organisations being unaware of the programme before participating in the study. That being said, the annual performance planning did indicate an incremental increase in the geographical spread of the programme, however, this may not be as a direct result of ineffectiveness but rather as a result of a controlled expansion.

Finally, the training of media organisations and community media journalists was rated as partially efficient, however, it was found that the subsequent value of the training was somewhat spread and may require some further investigation. However, based on the contextually relevant findings, it can be confidently stated that the programme was effective in increasing the exposure of community media organisations and mainstream media to science journalism in a controlled manner.

4.1.3.3. Project Impact

For objective 3, two outcomes had to be achieved to effectively contribute to one broader impact. Based on the findings, the two outcomes and the impact were met.

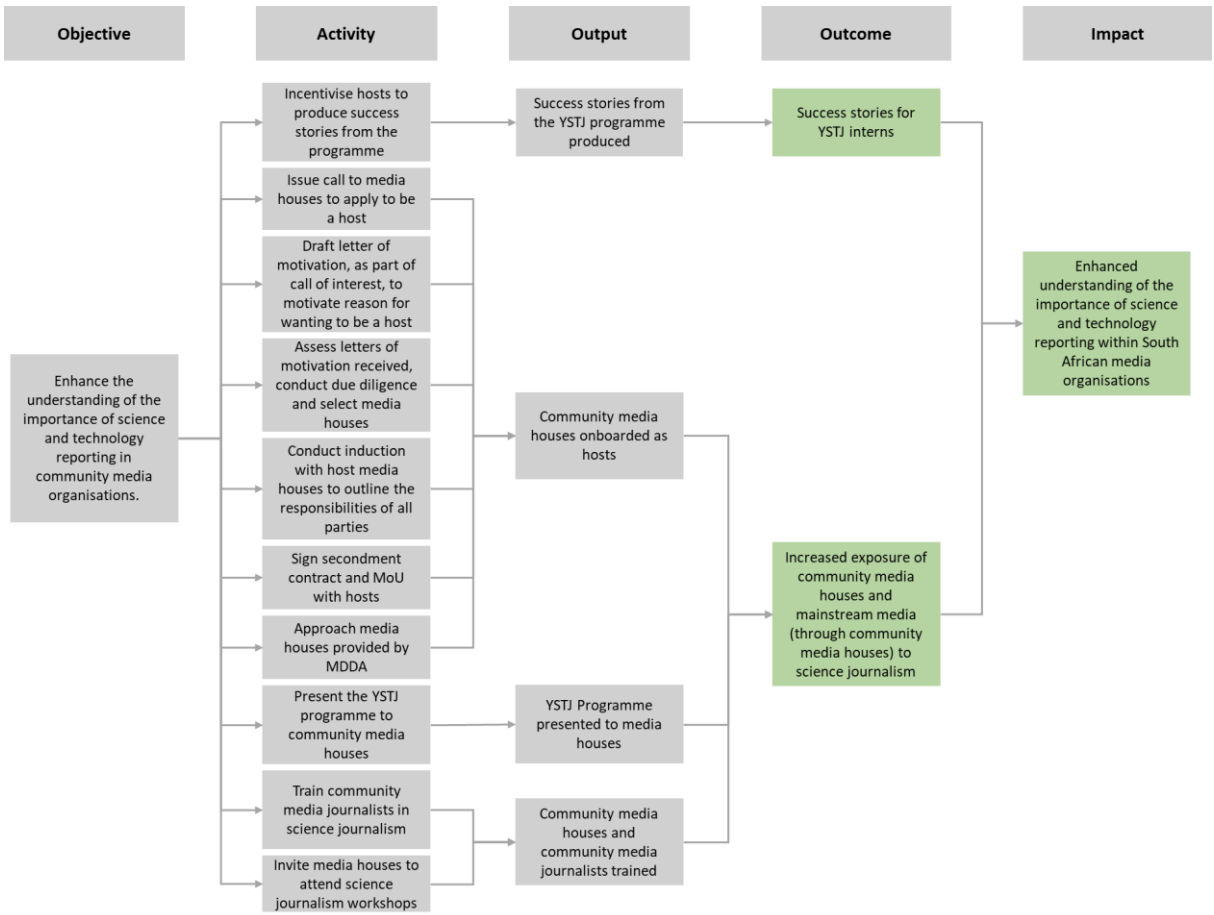


Figure 27: Results Chain Outcome of Objective 3 – Impact in Enhancing the Understanding of the Importance of Science and Technology Reporting in Community Media Organisations

The figures below indicate that the host media organisations believed that this objective has been met and contributed to enhancing the interest, as well as the understanding and importance of science and technology reporting within their respective media organisations.

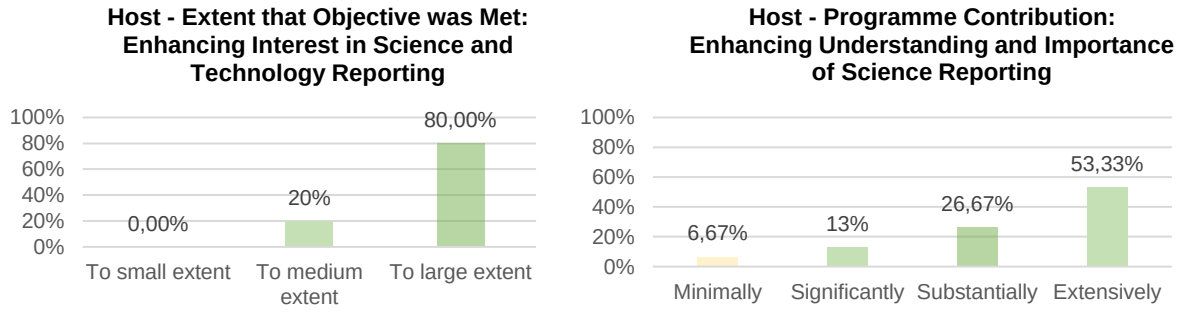


Figure 28: Host Perception Regarding Outcome 6 and Programme Contribution

Although interns were not meant to directly contribute to this objective, the host media organisations acknowledged that the interns played a significant role here.

Overall, the programme resulted in a positive change, both intended and unintended, and thus, had a considerable impact in enhancing the understanding of the importance of science and technology reporting in South African media organisations.

4.1.4. Objective 4: Summary Evaluation

4.1.4.1. Project Efficiency

For objective 4, four activities were set to produce two outputs to effectively translate into two outcomes and two impacts.

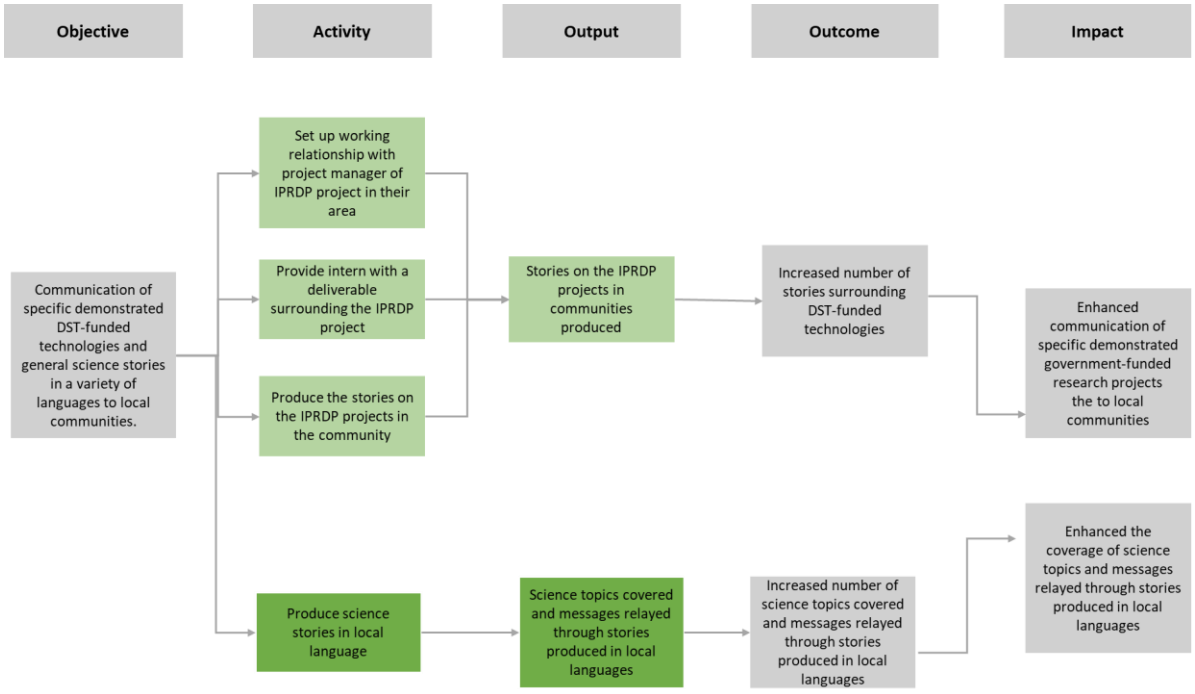


Figure 29: Results Chain Outcome of Objective 4 – Efficiency in Communication of Specific Demonstrated DSI-Funded Technologies and General Science Stories in a Variety of Local Languages

According to the findings, this was met, resulting in stories related to the IPRDP projects being produced. Additionally, the activities related to providing interns with deliverables related to the IPRDP projects and the production of stories on the IPRDP projects were rated as met. To this end, the provision of stories on IPRDP projects in communities was efficiently produced with no overt areas for improvement noted.

Of an exemplary standard was the activity related to science stories being produced in local languages. Findings indicated that the programme systematically increased its inclusion to reach full integration of all local languages, with the largest proportion of stories produced being in Sepedi and the lowest in isiNdebele, over a three-year period. This resulted in the output being rated as exemplary. Therefore, the coverage of science topics and the relay of messages through stories produced in local languages were highly efficient with no areas for improvement noted.

4.1.4.2. Project Effectiveness

For objective 4, four activities had to be conducted to achieve two outputs. Based on the findings, one output was met, whereas, one was output was exemplary, resulting in one outcome being met and one being exemplary achieved as depicted in Figure 37 below.

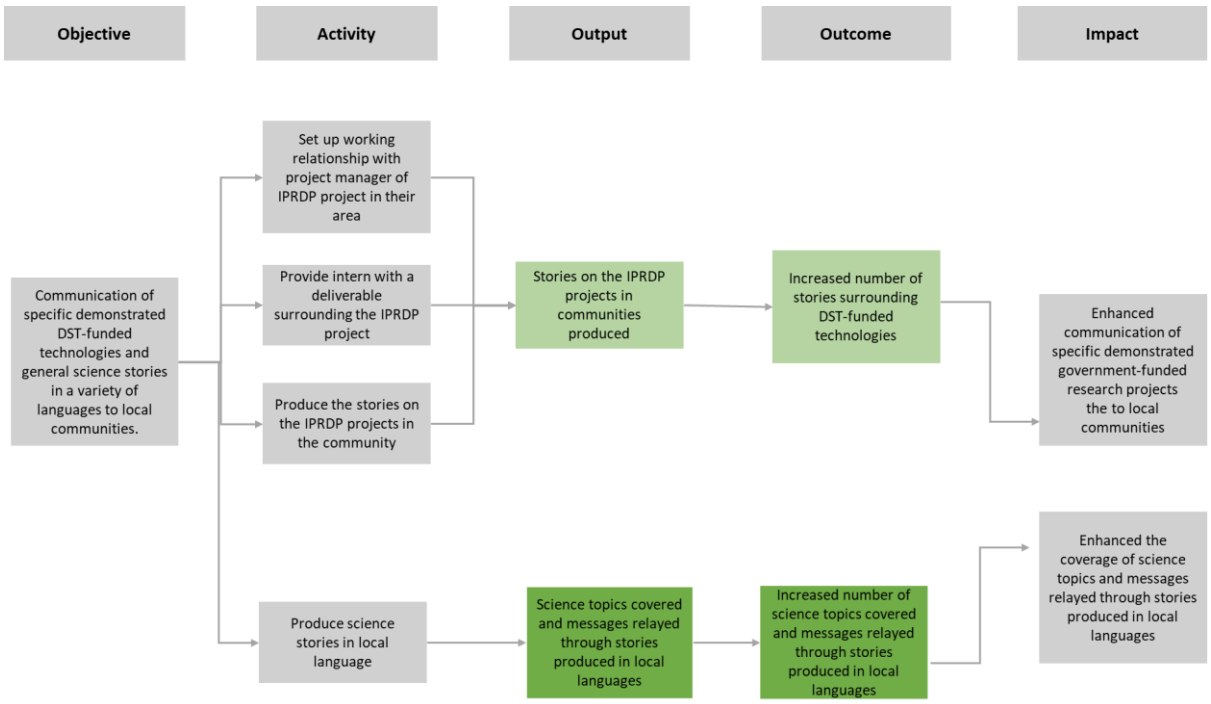


Figure 30: Results Chain Outcome of Objective 4 – Effectiveness in Communication of Specific Demonstrated DSI-Funded Technologies and General Science Stories in a Variety of Local Languages

Findings indicated that there was an increased number of stories surrounding DSI-funded technologies, it can, therefore, be stated that this objective was achieved. Interns were expected to produce media on IPRDP projects in communities to enhance communication of government-funded research projects. A total of 107 stories were produced over a period of three years, with a marked decrease from 2016. Considering the spread and shortened life-cycle of IPRDP projects, it was found that working relationships were established with project leaders that led to the production of these stories. Likewise, host media organisations included these stories frequently in their respective media coverage. Therefore, it can be confidently stated that the programme was effective in increasing the number of stories focusing on DSI-funded technologies.

The findings revealed that the interns increased their reporting in indigenous languages (excluding English and Afrikaans) from three languages in 2016 to nine in 2018. The initial low output appears to be as a result of placing interns with media organisations that did not report in their first language. Through the corrective actions of the programme, this was addressed and the output accelerated significantly. It was noted that resourcing the interns and media organisations with scientific dictionaries that includes all 11 official languages contributed significantly to this outcome. However, it should be noted that this relates to media on science and technology in general and is not indicative of the number of topics covered. It, therefore, confirms that measures put in place to increase the number of science stories produced in local languages were effective.

4.1.4.3. Project Impact

For objective 4, two outcomes had to be achieved effectively to contribute to two broader impacts. Based on the findings, one outcome was met and one outcome was rated as exemplary.

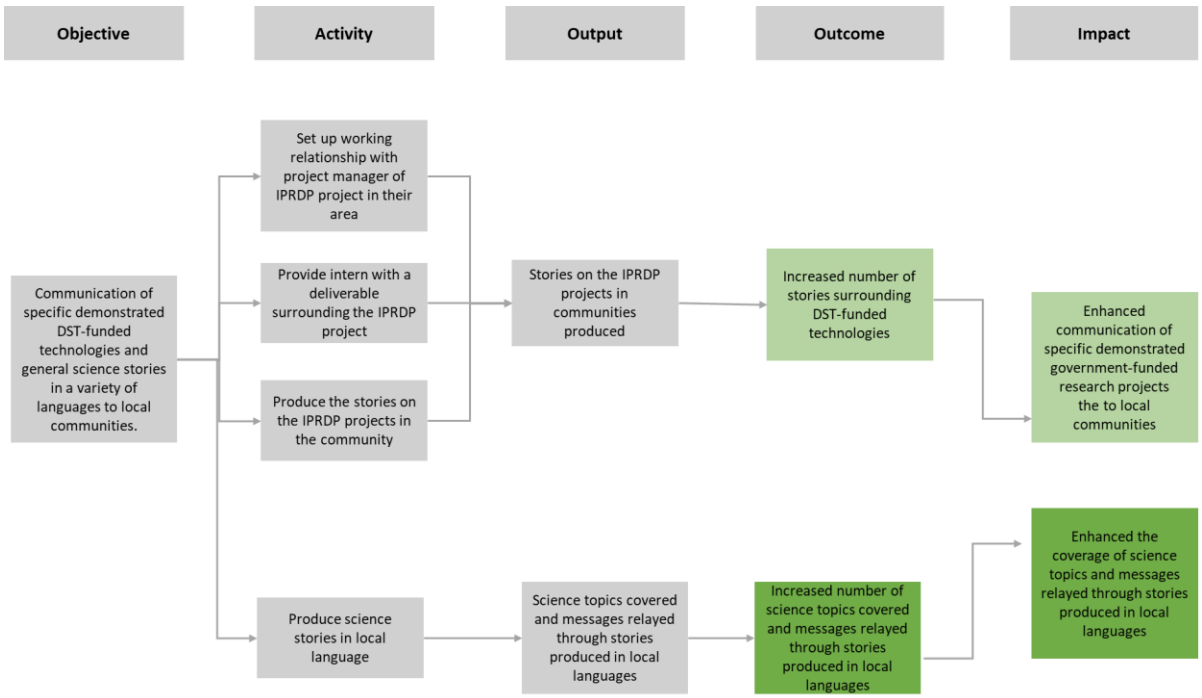


Figure 31: Results Chain Outcome of Objective 4 – Impact in Communication of Specific Demonstrated DSI-Funded Technologies and General Science Stories in a Variety of Local Languages

It was noted that the programme was effective in increasing the number of stories that focus on DSI-funded technologies. In addition to the outcome being met, the figures below indicate that the host media organisations were of the opinion that the programme largely met its objective and contributed to enhancing and increasing the communication of specific demonstrated government-funded research projects in local communities.

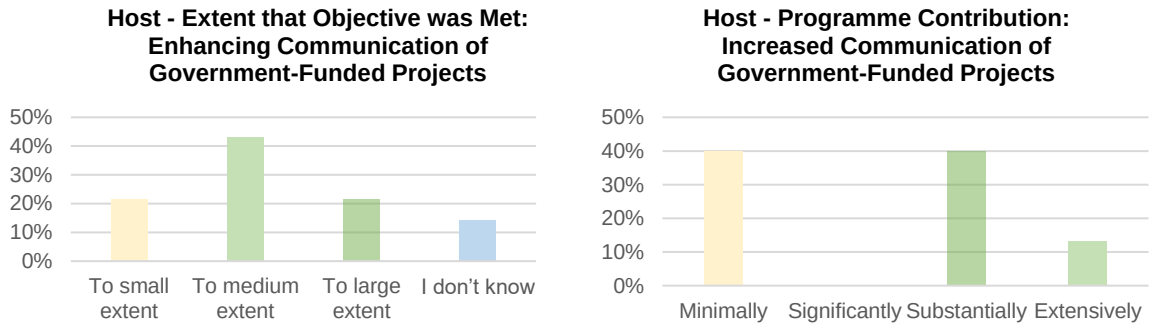


Figure 32: Host Perception Regarding Outcome 8 and Programme Contribution

As reflected in the figures above, perceptions regarding whether the YSTJ programme enhanced communication of government-funded projects varied. It appears as if the deviation was a result of the majority of these projects ending in 2016, which would explain a lowered subsequent output and the inability to capture a uniform response. That being said, an increase, whether minimally or extensively was noted. Therefore, it can be stated that the programme contributed to the broader impact of increasing and enhancing communication of specific demonstrated government-funded research projects to local communities.

It was also noted that the programme was highly effective in increasing the number of science stories produced in local languages. In addition to the outcome being met, the figures below indicate that both the host media organisations, as well as the interns, were of the opinion that the programme met the objectives of enhancing and increasing the media coverage in local languages.

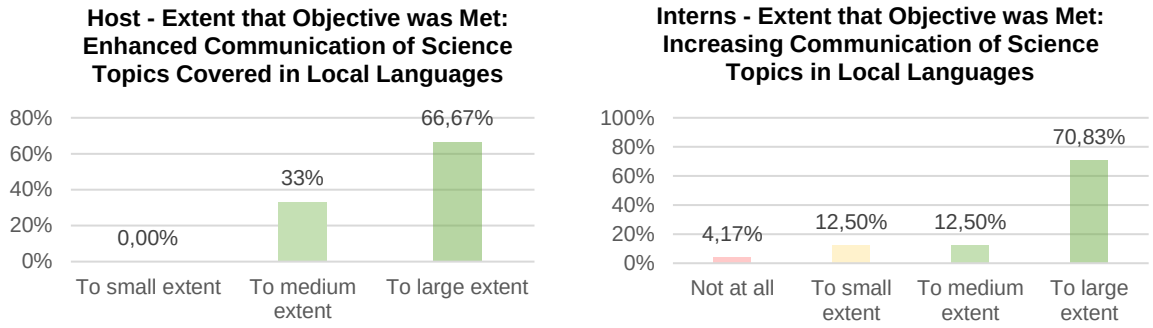


Figure 33: Host and Intern Perception regarding Outcome 9

The host media organisations also indicated that the programme contributed extensively to increased communication of science and technology stories in local languages.

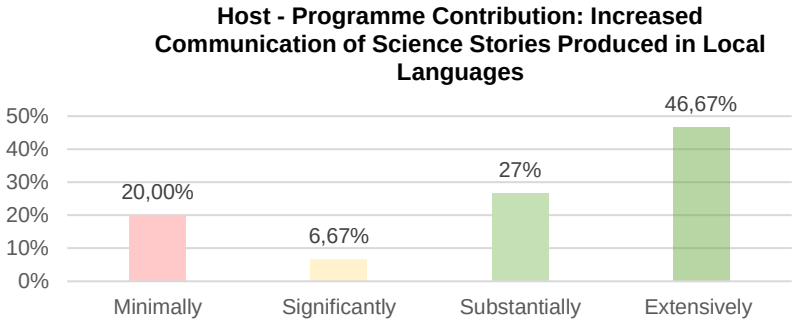


Figure 34: Host Perception on Programme Contribution on the increased communication of science and technology stories in local languages

An enhancement and increase in the communication of science stories were noted in all instances. Although some host media organisations indicated a minimal increase, an increase was noted regardless. Therefore, it can be confidently stated that the programme contributed to the broader impact of enhancing the coverage of science topics and messages relayed through stories produced in local languages

Overall, the programme resulted in a positive change, and thus, had a considerable impact in enhancing the communication of specific demonstrated government-funded research projects to local communities, as well as the enhancement of the coverage of science topics and messages relayed through stories produced in local languages.

4.2. Summary Evaluation of the Overall Experience

Although the efficiency, effectiveness, and impact have been determined by considering the feedback of both interns and community media organisations, a good measure of programme success is

determined by whether the participants will recommend the programme to others and whether the practice will be continued in the absence of the programme.

In this instance, all online intern participants indicated that based on their experience they would recommend the programme to their peers and although several challenges minimised the experience of some focus group intern participants, there was consensus that the programme had a positive impact.

In addition to this, although the majority of the host community media organisations participants do not have dedicated science and technology broadcast slots or reporting spots, almost all who participated in the study, intended to continue the practice provided that the necessary skills are available. Finally, now that awareness has been raised on the programme, findings indicted that all non-host community media organisations participants are interested in hosting and mentoring interns.

5. Detailed Overview of the Data Analysis

The following section presents the analysed data for each theme and its respective sub-themes as aligned to the four programme objectives. As depicted in Figure 42 below the analyses focus specifically on the efficiency and effectiveness that informed the impact. The textboxes highlighted indicate the extent to which the programme's effectiveness and efficiencies were realised. Dark green indicates exemplary met, light green met, and amber boxes partially met and areas highlighted in red as not been met.

5.1. Detailed Analysis of Efficiency and Effectiveness: Objective 1 - Development of Science Journalism Skills in the Youth and Enhanced Career Opportunities

The following highlights the efficiency and effectiveness of objective 1 by analysing the activities, outputs, and outcomes associated with the development of science journalism skills in the youth and enhanced career opportunities.

a. Outcome 1: Enhanced science and technology journalism skills among YSTJ interns were evaluated as follows:

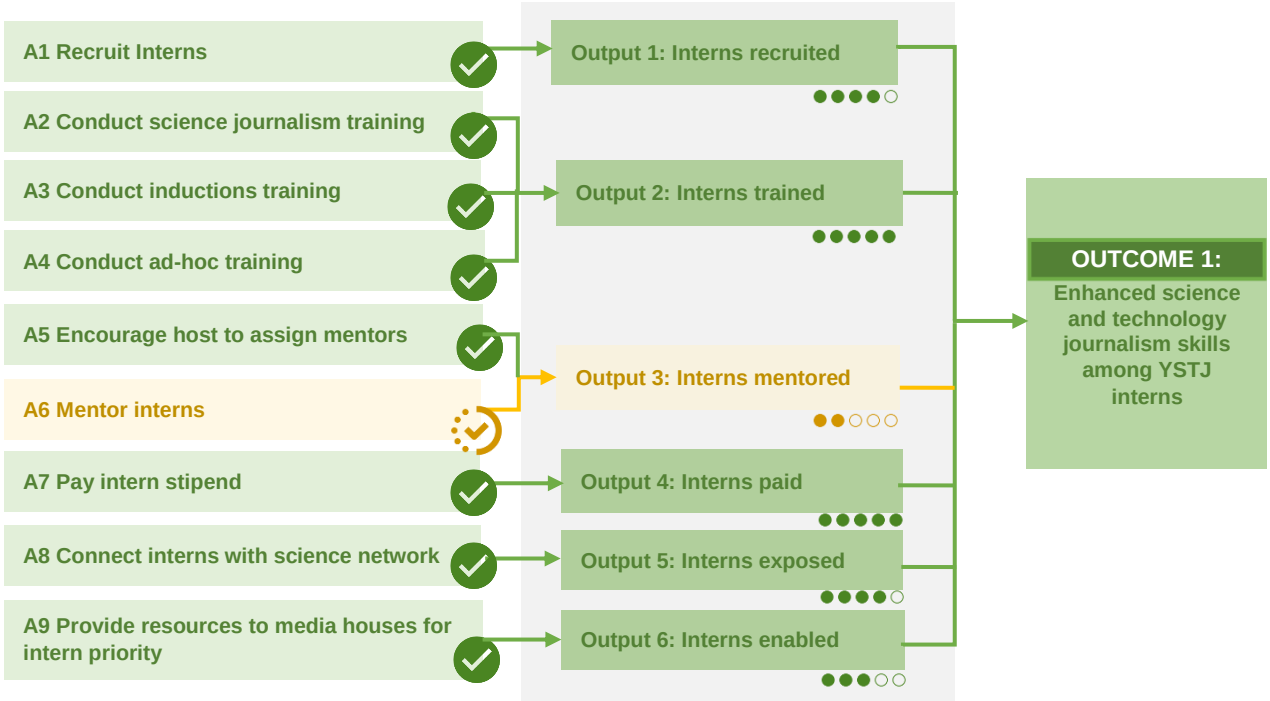


Figure 35: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 1

- ***Output 1: Interns Recruited***

SAASTA established relationships with various community media organisations, as well as with the Media Diversity Development Agency (MDDA). These activities ensured efficiency in the successful recruitment of 55 young people who were appointed and placed at various community media organisations. This is supported by the secondment contracts with interns and memorandums of agreements with media organisations.

- ***Output 2: Interns Trained***

There were different forms of training for the interns that included induction, science journalism training, and on-the-job training, among others. Interns were requested to indicate the extent to which they received training and the extent to which the training contributed to their relevant skills development.

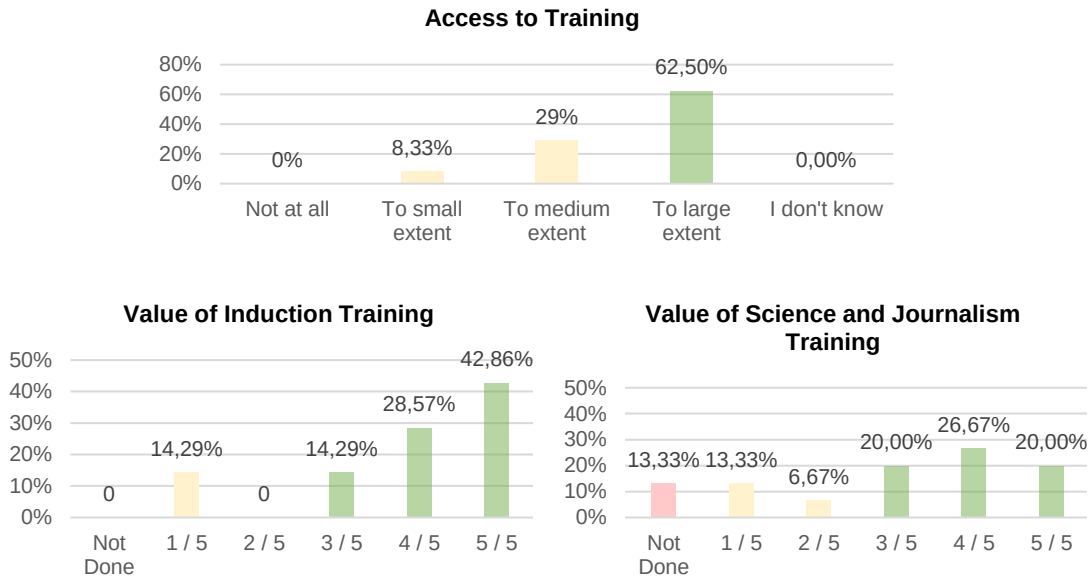


Figure 36: Intern Training

The majority of the participants (62.5%) indicated that they had access to training to a large extent. The value of induction training provided, in the context of skills development, was rated highly with 42% rating the induction 5 out of 5, 29% at 4 out of 5, and 14% at 3 out of 5, thus being rated as met. With regard to the science journalism training, 20% of the interns rated the training at 3 out of 5, 26% rated the training at 4 out of 5, whiles 20% rated the training provided at 5 out of 5. In summary, the majority of participants received training that made a valuable contribution to skills development.

> *"I did not get much at the beginning of the internship but then when I eventually got it, it was helpful because it helped me to understand what was expected of me and the career on its own" [sic]*
>
> - *Intern Interview Participant 11.*

Social media was seen as very beneficial training and noted that the programme did, indeed, try to equip the volunteers well with the required skills for science journalism. It was indicated that interviewing skills, with specific focus on how to engage scientists is a definite requirement and how to stick to the facts without diverging. Also how to identify news-worthy science stories.

It was also indicated that language, with specific focus on terminology, is an area that requires improvement. Stated that since there are times that a term may not be available (from conceptualisation of the term), the journalists are required to explain the concept, and meaning is sometimes lost as a result. Therefore, more focus should be placed on how to express or explain complex ideas in simple terms.

It was also noted that there were positive unintended consequences; skills were developed that did not form part of the programme. These included editing in digital content (technical), editing audio content (technical), resource design (technical), research capability (technical), packaging of news stories (technical), long-form packaging (technical), protocol management (technical and soft), people management skills (soft), presentation and facilitation skills (soft),

- *Focus Group 1 Observer Notes*

In turn, the host community media organisations were asked to indicate the extent to which the programme contributed to the development and enhancement of science and technology journalism skills among the interns hosted.

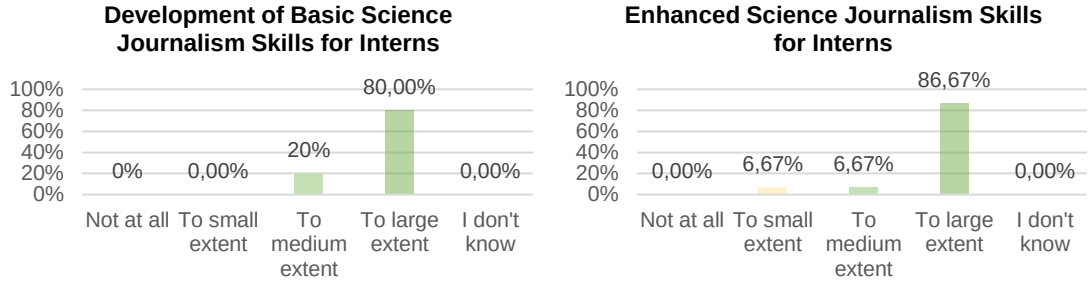


Figure 37: Skills in Science Journalism

The majority of the respondents (80%) indicated that the programme developed basic science journalism skills and subsequently enhanced journalism science and technology journalism skills (86.67%). Thus the view of the hosts recording the deliverable as exemplary.

- ***Output 3: Interns Mentored***

As part of the programme, interns were to be mentored by the media hosts, and interns were requested to indicate to what extent did they received mentorship and to what extent it contributed to their skills development.

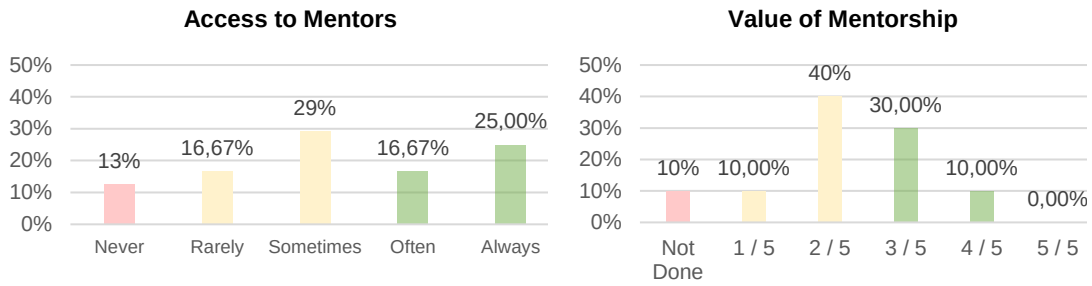


Figure 38: Intern Mentoring

The largest proportion of participants (29.17%) indicated that they received mentorship sometimes, whereas, 16.67% indicated that they received mentorship often, and 25% indicated they received mentorship always. However, 16.67% and 12.50% indicated that they rarely or never received mentorship, respectively. Therefore, it can be stated that mentorship was generally available.

In terms of the mentorship provided to the interns by the hosts, the majority of the interns rated the contribution of mentors below 3. About 40% of the interns rated the mentorship provided at 2 out of 5, with 10% rating the mentorship as 1 out of 5. Only 30% provided a positive rating for the mentorship providing a rating of 3 out of 5. Therefore, this deliverable was only partially met.

"All of us here that participated, I don't think we ever had mentors, so why not use people that actually know the challenges, that have the experience of what it takes to be in this programme, to be the mentors of the people that are upcoming because I think it would make sense for someone who knows what, from first-hand experience, to be able to cheer on and mentor someone. I think it would also be easier for the new interns to manoeuvre their way around it because they would have someone on their side that would understand." [sic]

Focus Group 1 Participant - P002

"I did not have a mentor in my community radio station, it was ya, and they didn't know what I was there for." [sic]

- *Focus Group 1 Participant - P001*

"I received significant mentorship and it was beneficial to have a mentor in the same field. This contributed to my skills development and I often received constructive feedback on how to improve." [sic]

- *Focus Group 1 Participant - P0011.*

It appears as if there is some uncertainty as to what a mentor is or the role of a mentor, yet the majority indicated that mentorship was lacking. It was apparent that there was an air of dissatisfaction and frustration from the individuals that did not receive mentorships. The respondents that did receive mentorship appeared somewhat muted in their experience. One respondent asked if positive experiences can be noted. P0011 indicated that (he/she) had an exceptional mentor and was able to develop more holistically. This does not appear synonymous with the rest of the group.

It was indicated that in some instances mentors were assigned by providing contact numbers for individuals in the science industry only, however, these individuals were rarely available and were subsequently abandoned. Generally, participants noted that mentorship in their particular streams would have been beneficial since some were required to engage in streams where they have little to no experience.

- *Focus Group 1 Observer Notes*

"I think for me it was quite difficult, especially where I was placed, because immediately when I was placed at the station, the person who was supposed to be my mentor left the station to join a public broadcaster. And no one wanted to take the role and be my mentor; I was a mentor to myself. As a mentee and he left while we were in a process of, in fact, he was training me to have knowledge in Electronic Media because I only had experience in Print so I felt that it was very challenging because I had no one to report to. I had no one to guide me on what to do, what not to do." [sic]

- *Focus Group 1 Participant - P0010.*

P0011 stated that the host was excellent and in some instances even provided assistance where no assistance was required. It was also noted that with his/her initial placement there was another intern that appeared to be the 'black sheep' and was doing her own thing and the host did not know what the intern was supposed to do. In turn, the participant decided to act as a mentor for the other intern after she exited the programme.

- *Focus Group 1 Observer Notes*

Concurrently, the host media organisations were requested to indicate how efficiently they felt they were in assigning mentors and conducting the mentoring.

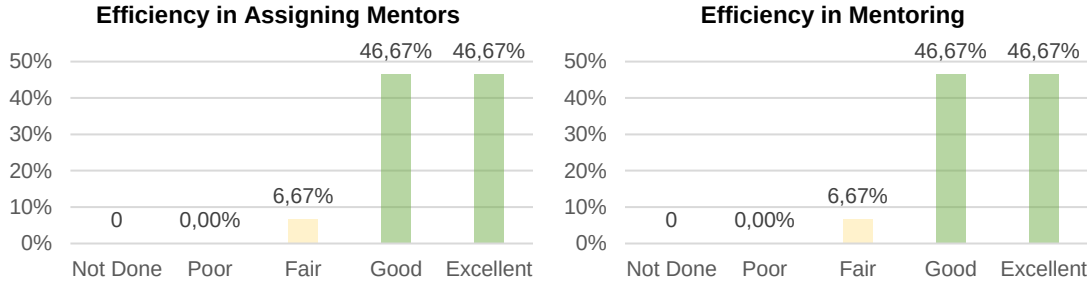


Figure 39: Mentoring by Hosts

The host media organisations rated themselves highly in the mentoring of interns. However, as indicated, the respondents deviated in the perceived value it contributed to their development when mentoring was conducted.

"[The media organisations] make you feel as if you are doing them a favour." [sic]

- *Focus Group 1 Participant - P008*

P0012 stated that no active or beneficial mentorship received but rather management; it was not supportive in nature. A predominant assent is noted through nodding heads. It was noted that there is

a general disconnect between the interns and the stations and it was stated that SAASTA should have briefed the two groups together. It was also noted that the relationships are not monitored by SAASTA.

- *Focus Group 1 Observer Notes*

- ***Output 4: Payment of Stipends***

Stipends were paid to enable the interns to cover their living expenses during their deployment and are not considered a wage or salary. Participants were requested to indicate to what extent they had timeous access to their stipend to enable continued development.

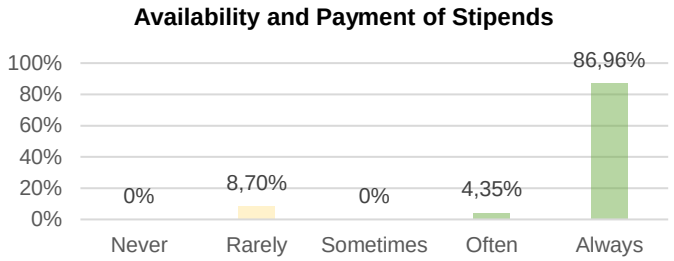


Figure 40: Intern Stipends

The payment of stipends to the interns was done successfully, with the majority of the interns indicating that they always received their stipend in a timeous manner. At least 86.96% of the interns indicated that they always received their stipends, while only 8.70% indicated that they rarely received their stipends on time. This is an indication that SAASTA was efficient in enabling the interns to continue their development in context. This deliverable is exemplary met.

"The stipend we were paid came in handy, especially to me because I come from an underprivileged community and family and most importantly because I am my family's sole breadwinner since both my parents and sisters are unemployed" [sic]

- *Online Intern Participant 2.*

- ***Output 5: Interns Connected with Credible and Relevant Scientists***

As part of the programme, interns were to be exposed to knowledgeable individuals within the industry to ensure the flow of quality, relevant, and factually correct information in the media. Participants were asked to indicate to what extent these individuals contributed to their skills development.

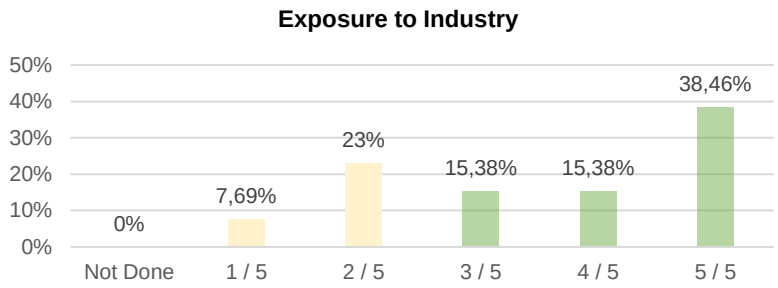


Figure 41: Industry Exposure

The majority of the interns indicated that exposure to relevant and credible scientists contributed to their skills development significantly, with 15% providing a rating of 3 out of 5, 15% providing a rating of 4 out of 5, and 38.46% providing a rating of 5 out of 5. Therefore, this deliverable was met.

> *P0010 indicated that although he/she lacked mentorships, the networking was "amazing" in terms of gaining experience in science journalism.*
>
> - *Focus Group 1 Observer Notes*

On the other hand, a collective 30.77% of respondents indicated that little value was derived from this, providing scores of 1 and 2 out of 5. that contributed to their skills development, However, all participants indicated that they did have access to industry experts.

- ***Output 6: Media Houses Provided with Resources***

Community media organisations are generally under-resourced, therefore, part of the programmes' objectives are to provide resources to these institutions to enable the interns to develop their skills. The host media organisations were requested to indicate what resources had been provided and how efficiently these resources were provided.

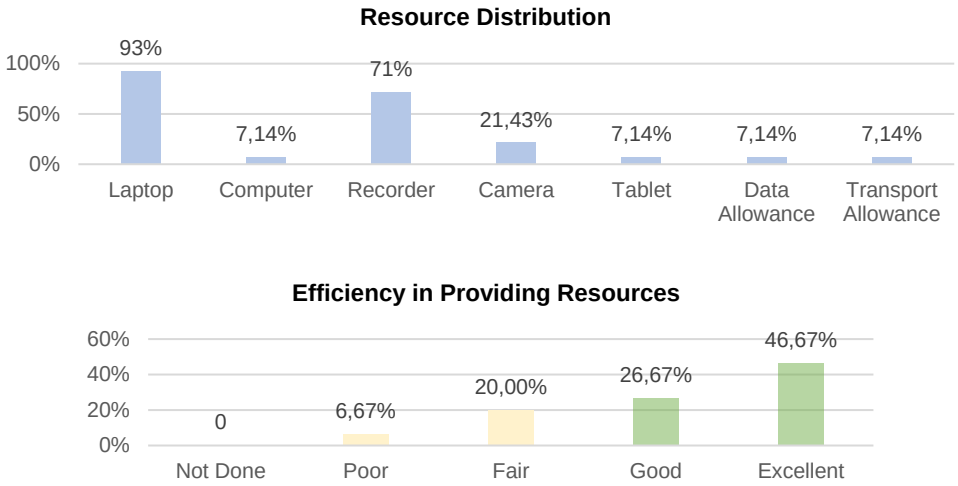


Figure 42: Resourcing

The resources provided were largely based on the needs of the different host community media organisations. It was confirmed that 93% of the respondents received a laptop, whiles 7.14% received a desktop computer as well. A total of 71.43% of respondents received a field recorder for interviews, whiles, 21.43% of the respondents received cameras. Finally, only one respondent (7.14%) indicated that they received a tablet, data allowance, and travel allowance.

The majority of the host media organisations felt that resources were provided efficiently, with 46.67% of the respondents rating the efficiency as excellent, followed by 26.67% as good, and 20% as fair. Only one participant indicated that it was poor. This was due to the delayed allocation of resources in the year after the period under review.

> *"[Received] laptop and recorder, but only received in 2019." [sic]*
>
> - *Online Host Media Organisations Participant 1*

In addition, intern participants were requested to indicate how often they were able to access the resources required to enable the development of their science journalism skills.

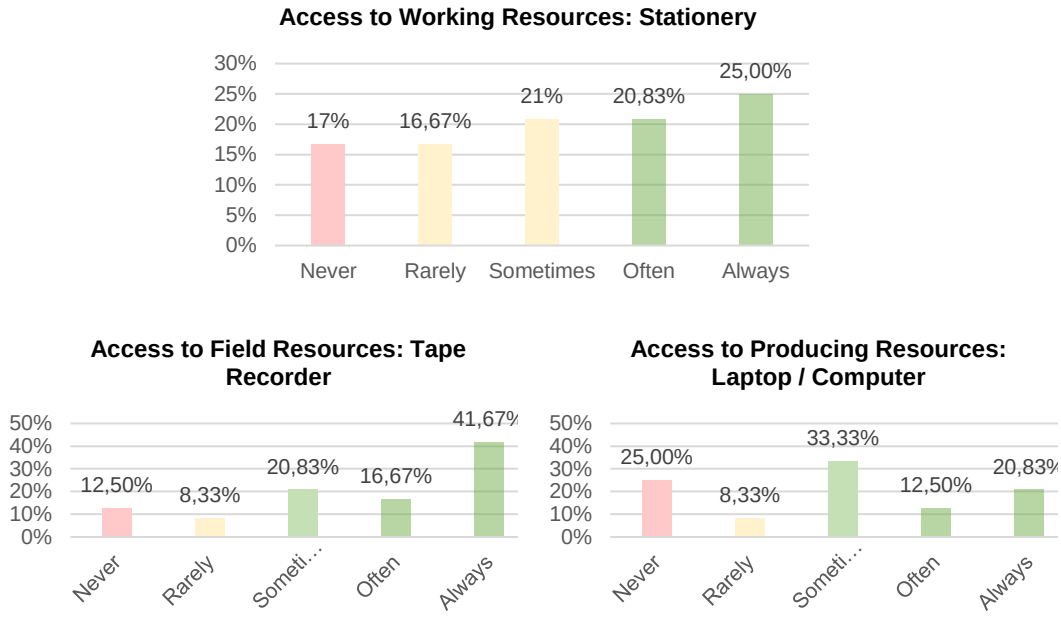


Figure 43: Resource Access

In all instances, the majority of the respondents indicated varying levels of access to the resources provided. With regard to access to producing and field resources, 20.83% and 41.67% of respondents, respectively, indicated that they always had access. In terms of producing resources, the largest proportion of respondents had access to producing resources sometimes at 33.33%. Although this deliverable was met, there appears to be significant room for improvement in terms of prioritising the provision of resources.

"I am not sure what has been put in place thus far, I was part of the first internship group. Much needed to be done with regards to my community host being prepared to have me and having resources in put for my stay there" [sic]

- *Online Intern Participant 5.*

"SAASTA should continue to assess the working environment of the community media that the intern is placed, some are not work-friendly, interns hardly have access to stationery provided such as tape recorder." [sic]

- *Intern Interview Participant 3*

It was noted that not all of the interns were provided with the same information. P008 indicated that issues were raised on the absence of resources and although it was dealt with, it was dealt with too late to contribute to the experience. P0010 supported this by indicating that although resources were supplied, they were never provided with the opportunity to use the resources. This was raised with SAASTA to no effect.

P008 also indicated that he/she proposed stories consistently, but in some instances, travel would have been required or follow-up stories, which was not possible due to the lack of resources.

- *Focus Group 1 Observer Notes*

- ***Output 7: Satisfaction and Exit Survey Completion***

Monitoring of a programme is imperative to ensure its continued success, therefore, satisfaction should be measured during secondment and after exiting the programme. This may be done through engagement with the project leaders and/or a survey. This is to enable improvement that could support or contribute to continued skills development.

A desktop study revealed that several attempts were made to identify gaps within the programme. The following analysis provides an extract of some of the suggested improvements that were elicited from the interns by the programme and the subsequent process change.

Suggested Improvements by Interns	Programme Response
"Meet the interns half way with the resources, for instance call cards for telephonic interviews"	A survey was distributed to identify which resources were required to enable skills development. These resources were supplied, as well as a data and travel allowance
"Language proficiency of journalist must be compatible with the broadcasting/writing language of the host"	Interns are now allocated with main focus on compatible language. In addition, the programme procured science dictionaries in different languages for hosts and interns
"More workshops and training on how to report on science"	An online course on science journalism is now included in the contracts with interns

Figure 44: Programme Improvement

From the partial analysis, it is clear that attempts were made to consider and respond to the suggestions made by the interns to enhance the programme as from 2018. However, it is noted that this feedback is generally elicited at exit.

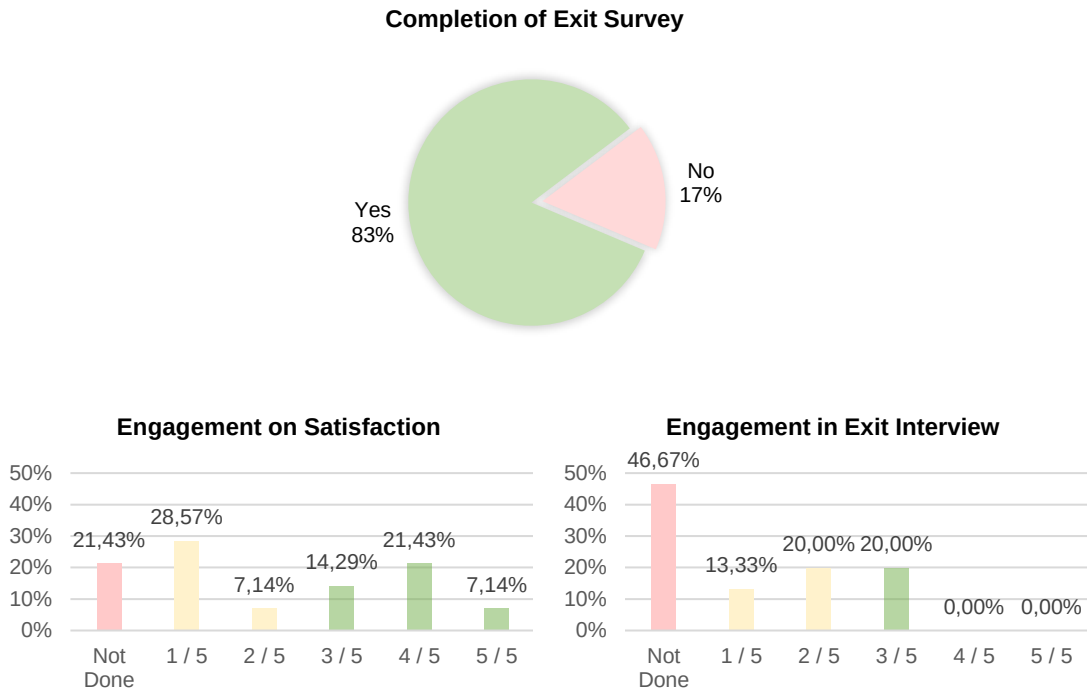


Figure 45: Intern Satisfaction

It was found that the majority of the participants (83.33%) completed an exit survey. In terms of exit interviews, 46.67% of respondents indicated that this was not done, whilst 13% and 20% rated the exit engagement at 1 out of 5 and 2 out 5, respectively. Only 20% of the participants indicated that they were sufficiently engaged upon exit. Therefore, this deliverable was, to a large extent, not met, although the majority of the exit forms were completed.

"I do not remember being afforded the chance to do an exit interview" [sic] –

- *Intern Online Participant 4.*

"Maybe I forgot to complete [the exit survey]" [sic]

- *Intern Online Survey Participant 7.*

With regard to engagement during the internship, a large proportion (21.43%) of respondents indicated that no engagement was conducted to assess their satisfaction or experiences during the internship. Of those who were engaged during the internship, 28.57% rated the engagement at 1 out of 5 and 7.14% provided a rating of 2 out of 5. Approximately, 42.86% of the respondents rated the engagement 3 and above. Therefore, this deliverable was partially met. Considering that the survey that elicited improvements was only fielded in 2018, the spread of

the data makes sense as one-half of the participants were contracted during the period before this.

"I resigned before the completion of internship" [sic]

- *Intern Online Participant 5*

Although the question focused on the assessment of satisfaction during the secondment, it diverted towards overall experiences in engagement. It appeared as if this part of the discussion generated the strongest feelings. P008 started engaging the group on (his/her) experience and indicated that (he/she) left relatively early in (his/her) volunteership and noted that it was emotionally taxing on (him/her); (he/she) was not specific in (his/her) reasoning but had an intense emotional breakdown and opted to discontinue participation in the discussion on satisfaction.

Some probing questions were posed, including whether it appeared as if the media organisations appeared somewhat unconcerned; there was unanimous nodding around the table.

There was also some dissatisfaction noted on SAASTA's part; it was indicated that some interns never received feedback on the content or quality of the news articles. This meant that it was never considered how much research was done on a particular story or the quality of what was produced and as a result, interns would be excluded from other interventions, such as the Olympiads because quotas were not met. This was experienced as completely demoralizing.

- *Focus Group 1 Observer Notes*

"…felt like the focus is on quantity and not quality" [sic]

- *Focus Group 1 Participant P0011*

"My efforts were my best and my best was my best. I was so proud but the response was just 'thank you" [sic]

- *Focus Group 1 Participant P0011*

Generally, the group expressed demotivation at the lack of engagement from SAASTA and this appeared to be the most important to them; they were perceived as most passionate about the work they submitted that did not get any attention nor feedback.

- *Focus Group 1 Observer Notes*

b. Outcome 2: Improved Employability of YSTJ Interns were evaluated as follows:

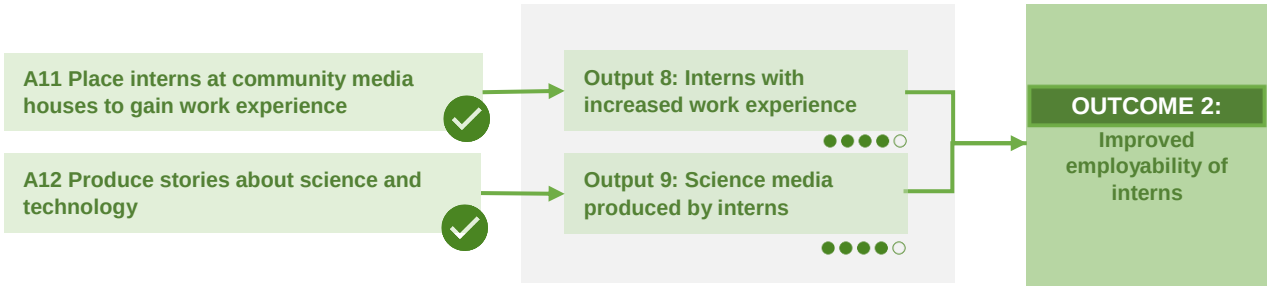


Figure 46: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 2

- ***Output 8: Interns with Increased Work Experience***

Part of the core purpose of the programme is to provide the interns with increased work experience and ultimately contribute to their increased employability. Interns were requested to indicate the extent to which the programme contributed to an increase in their work experience and the extent that the interns gained science journalism skills through the placement at community media organisations.

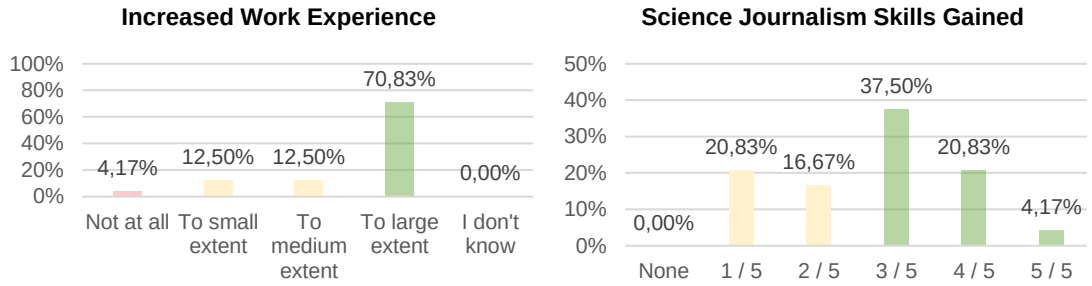


Figure 47: Work Experience

Based on the perceptions of the respondents, the majority (70.83%) felt that the programme contributed to the development of their work experience to a large extent. A total of 25% felt that it only contributed to a medium or small extent, whereas 4.17% felt that it did not contribute at all. The largest proportion of the interns at 37.50%, rated the experience gained in science journalism at 3 out of 5, whereas, 20.83% rated the experience 4 out of 5 and 4.17% gave the experience gained a rating 5 out of 5. A further 20.83% rated the experience gained as 1 out of 5.

P011 indicated that the project had a positive impact on his/her career and that he/she had no idea how deep science goes and his/her knowledge grew significantly as a result. He/She enjoyed eliminating misconceptions the most and believes that it is important to do that in science. Also, P010 indicated that although he had a negative experience during his secondment, the impact was positive since it drove him to pursue a freelance career in science journalism. That being said, P007 indicated that he/she was very interested in continuing in science journalism but that one year's experience is not sufficient to secure a position following the internship and it was subsequently abandoned.

- *Focus Group 1 Observer Notes*

It was noted here that there was a consensus that the internship is too short for the specialised skills required in science journalism and as a result, these interns are rarely taken seriously when interviewing for relevant positions. That being said, due to the inability to secure alternative but related employment after the internship, three interns have or are in the process of establishing businesses as freelancers, of which one is in science communications specifically.

- *Focus Group 1 Observer Notes*

It was also requested that the media organisations indicate the extent that they think the programme increased the work experience of interns and whether a systematic improvement in reporting skills was noted.

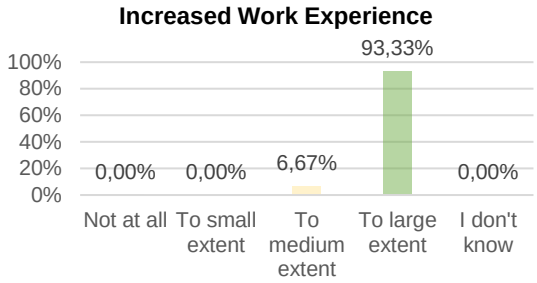


Figure 48: Improvement in Reporting Skills

Similarly to the interns' perceptions on increased work experience, the majority of the media organisations, at 93.33%, felt that the placement of interns at their respective media organisations contributed to increased work experience to a large extent, whereas, 6.67% felt it only contributed to a medium extent. All of the participating host media organisations indicated that there was a systematic improvement in the reporting skills of the interns for the hosting term, as a result of increased experience.

- ***Output 9: Stories about Science and Technology Produced by Interns***

The media organisations provided the interns with the platforms and support to enable the production of science and technology stories.

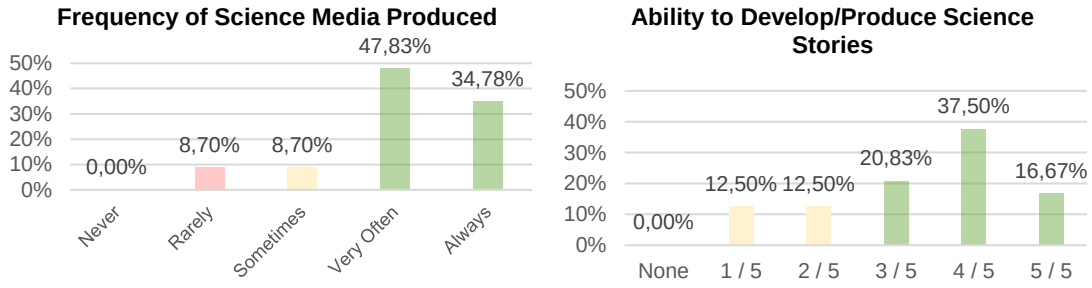


Figure 49: Producing Science Media

The majority of the interns indicated that they were provided with the opportunity to produce science media either very often (47.83%) or always (34.78%). Only 17.4% indicated that they were only able to produce science media sometimes or rarely. Based on the findings, this deliverable was exceptionally met. The participants also rated their ability to produce science and technology media as a result of the programme positively. The largest proportion of respondents (37.50%) rated their increased ability at 4 out of 5, followed by 3 out of 5 (20.83%),

and 5 out of 5 (16.67%). Only 25% felt differently, providing ratings of 2 out of 5 and 1 out of 5. Based on the findings, the deliverable was met.

The host media organisations were also requested to indicate the number of science-related stories produced before the programme and once the programme was launched.

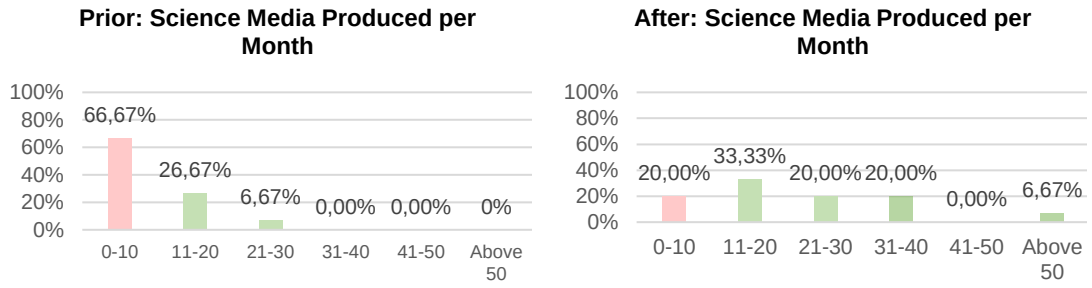


Figure 50: Change in Science Media

It was found that there was a marked improvement in the number of science media produce per month since the inception of the programme.

> *"The quality of our programming specifically the educational show increased mainly because we had the Science intern assisting to produce the show. We also had additional man-power because besides the science work, our interns also assisted with other tasks at the Radio station" [sic]*
>
> - *Host-Media Online participant 10*

Host media organisations were also requested to indicate whether they had dedicated science and technology slots/spots before the programme and whether they intend on continuing the practice of having dedicated science and technology slots/spots.

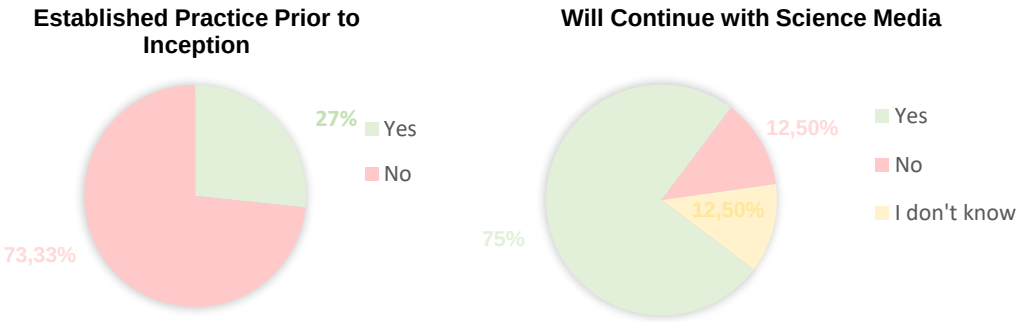


Figure 51: Science Reporting Practices

The majority of the host media organisations (73%) indicated that they did not have regular science and technology broadcast slots or publishing slots before hosting the interns. A total of 75% indicated that they would like to continue the practice of reporting on science and technology media provided that the skills are available, whereas 25% indicated that they either do not know or that they will not.

"Our media organisation is basically a learning institution so hosting the DSI-SAASTA will open more learning opportunities not only to the interns but to the community and our current presenters. This will happen through sharing of current journalism trends especially in the technology sector. Sharing ideas and obviously growing the station. We currently have slots or programs like TECH TUESDAYS and others. These programs will have a much better focus on the Journalism Technology that we need in order to shape the industry." [sic]

- *Host-Media Online Participant 5*

"It's another world of empowering young journalists in the industry. The industry has in the recent years dropped on employment opportunities for young journalists which, through this internship and mentorship, could intensify their skills and knowledge in journalism. Many of the organizations cannot afford to pay and prefer freelancers however the employment opportunities given to the young will help reduce unemployment." [sic]

- *Host-Media Online participant 7*

5.2. Detailed Analysis of Efficiency and Effectiveness: Objective 2 - Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities

The following highlights the efficiency and effectiveness of objective 2 by analysing the activities associated with Enhanced Interest in Science and Technology in Local Communities and the Recognition of Indigenous and Grassroots Innovation Existing in Communities.

c. Outcome 3: Increased Community Awareness in Science and Technology Through Media

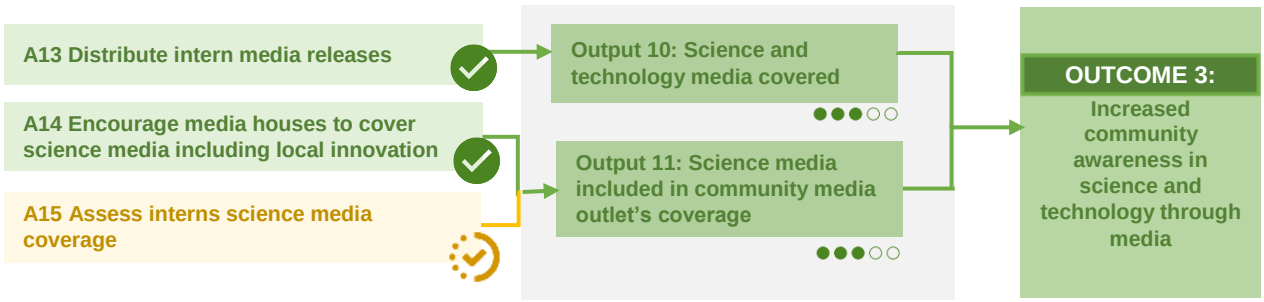


Figure 52: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 3

- ***Output 10: Science and Technology Media Covered***

  Interns were expected to produce media on science, technology, and local innovation as part of their internship.

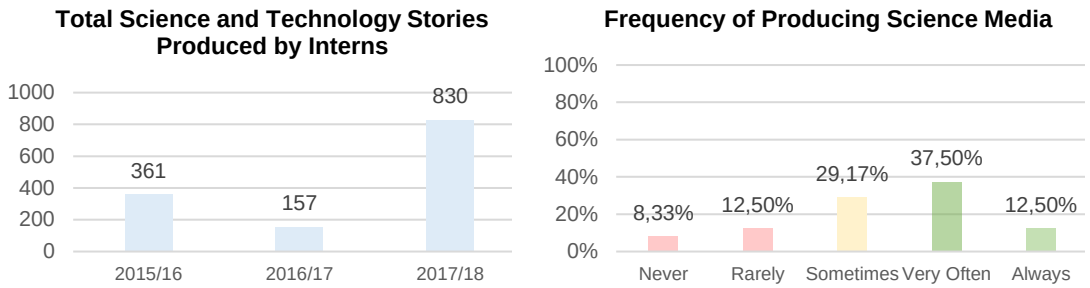


Figure 53: Output of Science and Technology Media

The respondents were requested to indicate how often they were able to produce media that focussed specifically on science and technology to enhance interest in local communities. The largest proportion of respondents (37.50%) indicated that they were able to produce science and technology media very often, whereas, 12.50% indicated always and 29.17% indicated they were able to produce it sometimes. A total of 12.50% and 8.33% indicated rarely or never, respectively.

- ***Output 11: Science Media included in Community Media Outlet's Coverage***

Interns were requested to indicate the extent to which their stories were included in the local community media coverage.

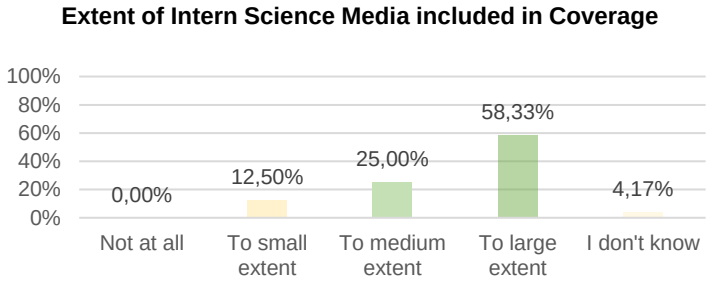


Figure 54: Science Media Coverage

The majority of respondents, at 58.33%, indicated that the stories were included to a large extent, followed by 25% which indicated that they were included to a medium extent. Therefore, this deliverable has also been met.

The host media organisations were requested to rate the efficiency of their activities when it comes to the distribution (publishing/broadcasting) of stories produced by the interns and encourage their community media organisations to cover science and technology stories aimed at enhancing interest in science and technology in local communities.

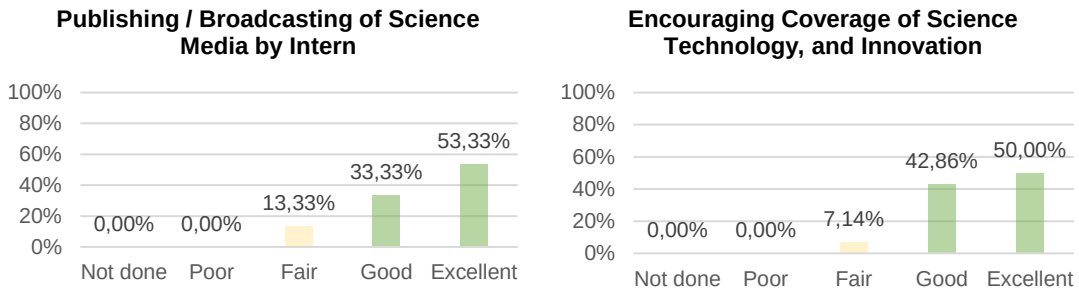


Figure 55: Interest in Science Media

Based on the data, the majority (53.33%) of the respondents from host media organisations felt that they were efficient in the publishing/broadcasting of science and technology media produced by the interns, whereas, 33.3% felt that their attempt was good. This is corroborated by the view shared by the interns, as outlined above in figure 62. Host media organisations were also requested to indicate how efficient they were in encouraging the coverage of science and technology stories; 50% indicated that their efficiency was excellent, followed by 42.86% at good. Therefore, this deliverable was exceptionally met.

"Enhanced Science News coverage by Journalist & Community Media Organisations Enhanced community awareness & interests on science stories. Community Media Coverage of scientific stories shall never be the same in SA, has changed broadcast environment!" [sic]

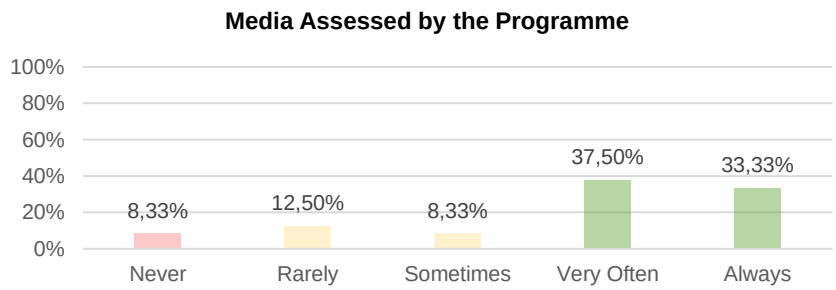
- *Host-Media Online participant 14*

"The intern was a role model to the youth, she encouraged others to inculcate interest in Science & Technology studies and to pursue a carrier in Science & Technology. Host-Media Online participant 6

"There is interest, more especially from the youth. The youth are becoming more interested. They opened up basically. For example, there is a school locally here that when we write stories about science and technology they wanted to have classes for science and technology after classes." –

- *Host Community Media Interview Participant 4.*

The interns were requested to indicate how often their stories were assessed and feedback provided, whiles the host media organisations were requested to indicate how often the content of the media produced was found to be of high quality and accurate.



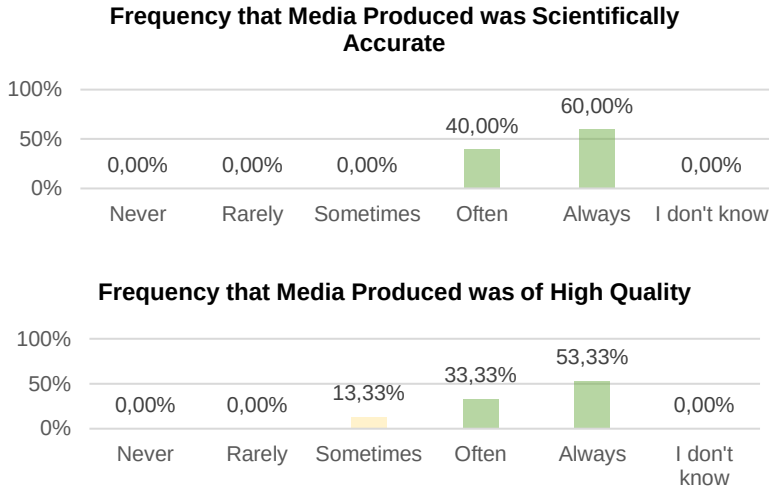


Figure 56: Media Assessment

Based on the findings, the largest proportion of intern respondents (37.50%) indicated that the stories they produced were assessed and feedback provided by the programme leaders often, whereas, 33.33% indicated always. The remainder indicated sometimes (8.33%), rarely (12.50%), and never (8.33%). Therefore, this deliverable has been met.

> *"Sometimes the feedback would be just straight forward, you want more, I mean you put in so much effort into your research and going out to look for these stories, but sometimes it would just be, 'thank you, you could have done…', like that's what I think we'd expected. 'Maybe if you could have done it in that kind of way instead of this kind of way, or maybe next time do it in this kind of format instead of this kind of format.' But it was just that you've submitted and thank you for that."*
>
> - *Focus Group 1 Participant P008*

> *"I would say something that I was not satisfied with was in terms of feedback or assessment when you sent your stories to SAASTA; I got the impression that the focus was just on quantity rather than quality."*
>
> - *Focus Group 1 Participant P008*

> *P008 indicated that no feedback was ever received on the stories and generally there was only communication when there was a need for something from SAASTA's side. SAASTA never assisted in making sure that the stories produced, actually reached the target audience and SAASTA did not monitor the hosts. Although there were MoUs, there was a disconnect and he/she was unable to fulfil his/her contract. P012 indicated that there was never any constructive criticism. P11 indicated that there was some dissatisfaction with regard to SAASTA; never received feedback on the content or quality of the news articles.*
>
> - *Focus Group 1 Observer Notes*

Although assessment or feedback from the programme or the mentors appeared to be lacking, the majority (60%) of the host media organisations indicated that the media produced by the interns were always scientifically accurate. This was followed by 40% that indicated that they were often accurate. In addition, the majority (53.33%) indicated that the media produced was always of high quality, followed by 33% which indicated that it was often of high quality. Only 13.33% indicated that the articles were only sometimes error-free. Therefore, this deliverable has been met.

d. Outcome 4: Increased Community Awareness in Science and Technology Through Media

Figure 57: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 4

- ***Output 12: Stories on Indigenous and Grassroots Innovation Existing in Communities Published***

Interns were expected to produce media on the indigenous and grassroots innovation that already existed in communities. The desktop study found that these stories were included as part of the science and technology stories reported.

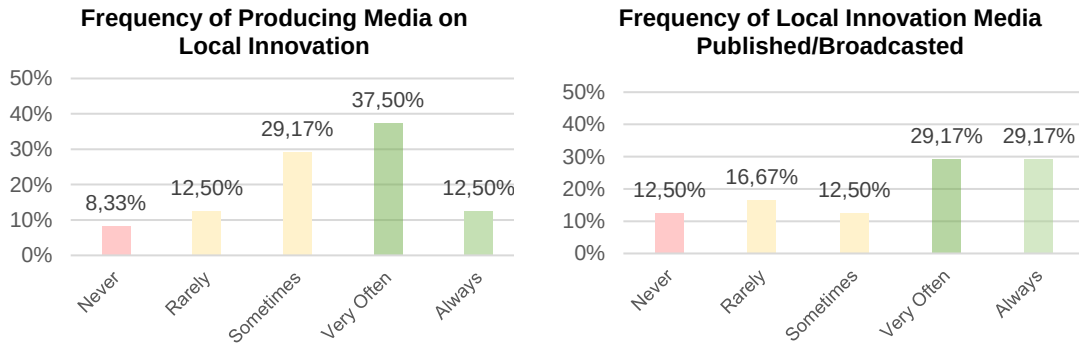


Figure 58: Media on Local Innovation

The participants were requested to indicate how often they were able to produce media that increased the recognition of local innovation. The largest proportion of respondents indicated that they were able to produce media on local innovation very often (37.50%), whereas, 12.50% indicated always and 29.17% indicated sometimes. A total of 12.50% and 8.33% indicated rarely or never, respectively. The frequency that this specific media was published or

broadcasted was predominantly either always (29.17%) or very often (29.17%). Therefore, this deliverable has been met.

The host media organisations were also requested to indicate the extent to which the programme increased community member engagement with the media organisations on local innovation through the stories that were published or broadcast.

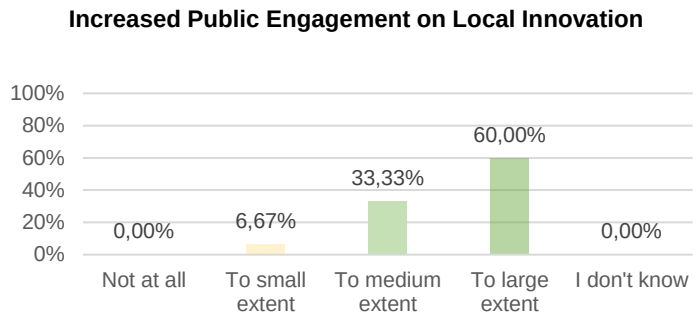


Figure 59: Public Engagement on Local Innovation

The majority of the participating host media organisations (60%) indicated that public engagement on local innovation increased to a large extent, followed by a medium extent at 33.33% and a small extent at 6.67%. Findings indicated that each host community media organisation noticed an increase in public engagement and, therefore, this deliverable has been met.

> *Our audiences have shown a lot of interest, this was evident as they were able to send us questions. It also helped us to research more. SAASTA even gave us some dictionaries with big words in our indigenous language.*
>
> - *Host Community Media Interview Participant 4.*

> *"It added so much value because we are coming from a semi-rural area that is a bit behind when it comes to technology and the program has helped a lot not only our community but the station as well in covering this much-needed area of science, technology and innovation."*
>
> - *Host Community Media Online Participant 8*

The activities aimed at enhancing interest in science and technology in local communities, including the recognition of indigenous and grassroots innovation existing in communities, were largely met. These included coverage of science and technology stories by interns, the inclusion of science and technology stories in community media organisations' coverage, and publication of stories focusing on indigenous and grassroots innovation

5.3. Detailed Analysis of Efficiency and Effectiveness: Objective 3 - Enhance the Understanding of the Importance of Science and Technology Reporting in Community Media Organisations

The following section focuses on respondents' perceptions of the DSI-SAASTA internship programme with regard to the application process, community media organisations' ability to produce science-related stories, and calls issued by the programme inviting community media organisations to participate. Respondents were asked to provide their opinion regarding SAASTA's efficiency, as the driver of the DSI-SAASTA's internship programme, in implementing various activities that contributed to the enhancement of the understanding of the importance of science and technology reporting in the community media organisations.

e. Outcome 5: Success Stories from the YSTJ Programme Produced

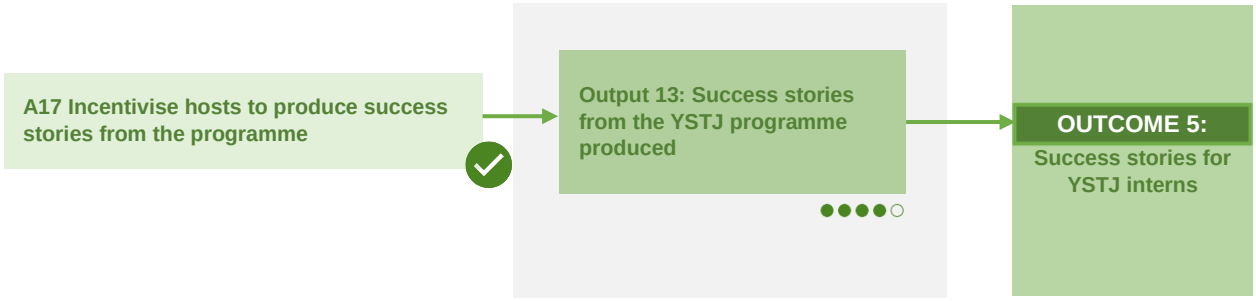


Figure 60: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 5

- ***Output 13: Success Stories from the YSTJ Programme Produced***

  Community media organisations were incentivised through the provision of working resources for the interns to use as a way of ensuring that success stories from the YSTJ programme were produced. All hosts indicated that they were provided with working resources, such as laptops and tape recorders to enable them to produce stories.

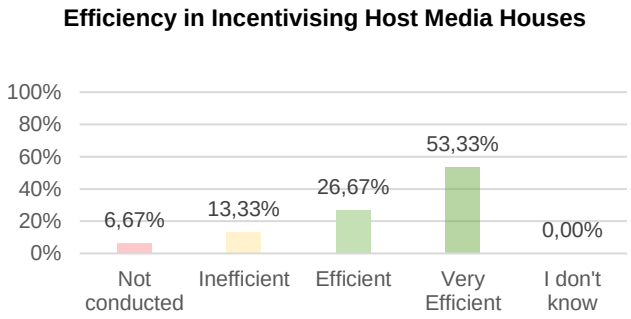


Figure 61: Incentivising Hosts

From a service delivery perspective, the majority (53.33%) of the host media organisations felt that the incentivising of host media organisations was done very efficiently, followed by 26.67%

who indicated that it was conducted efficiently. Only 13.33% of respondents felt that the programme was inefficient in this regard, whilst 6.67% indicated that it was not done at all. Therefore, the deliverable was met.

> *"After our media organisations was introduced to this initiative, many of our young listeners started to inquire about the field of studying Science & Technology" [sic]*
>
> *- Host Community Media Online Participant 9.*

f. Outcome 6: Increased Exposure of Community Media Houses and Mainstream Media (through Community Media Houses) to Science Journalism

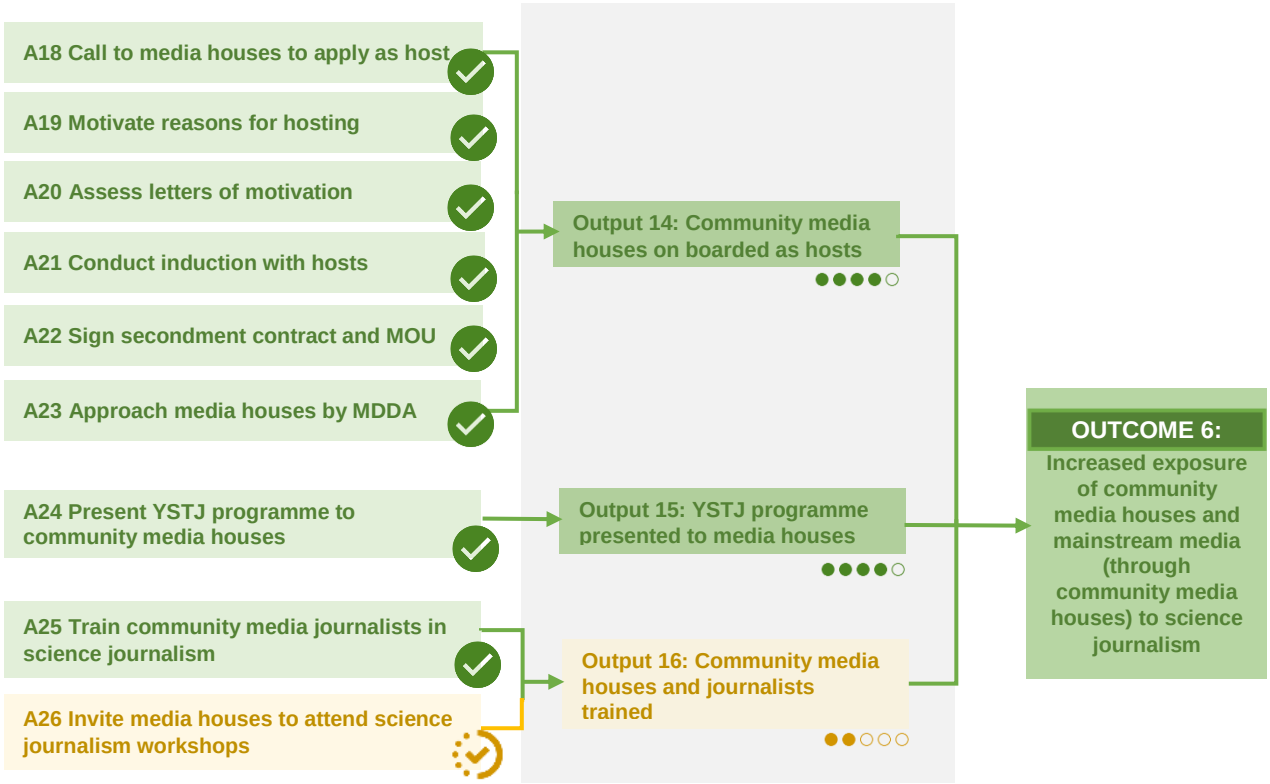


Figure 62: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 6

- ***Output 13: Community Media Houses On-Boarded as Hosts***

  From an administrative perspective, the activities to onboard community media organisations as hosts were conducted, however, the host community media organisations were requested to indicate how efficient they perceived the on-boarding process to be.

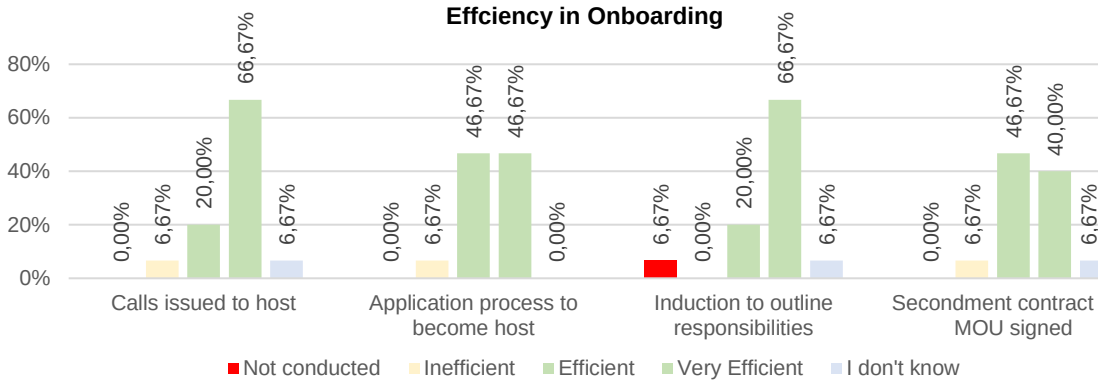


Figure 63: Host On-boarding

Overall, the onboarding process for the host community media organisations was found to be very efficient:

- 66.67% of respondents found the calls issued to community media organisations to be very efficient while only 6.67% found the process to be inefficient.
- 46.67% of respondents rated the application process to become a host as being very efficient, while 6.67% were of the view that the application process was inefficient.
- 66.67% of the respondents found the induction process very efficient, whereas, 6.67% indicated that induction did not occur.
- 40% of respondents rated the secondment contract and the signing of the memorandum of understanding to formalise the process to become a host as being very efficient, while 7% were of the view that the process was inefficient.

Based on the findings, one can state that the deliverable has been met.

"I understand about the interns. You're paying interns, this is local, this is good, and that is good. You're getting stipend so that is good, but we are not getting anything from you guys, except that we are providing you with a platform for the interns. But in terms of infrastructure and that even it would be better if you say guys, "What do you want?" you know something that because sometimes it's not about the monetary value." [sic]

- *Community Host Interview Media Participant 1.*

"I think with that service the introduction passed. I'm sure we did participate, but they did still have an open communication, first they would communicate, first they would visit the stations, there was communication to check progress everything, but the continuous training were given to the interns" [sic]

- *Community Host Interview Media Participant 2.*

"The induction was very effective, it was an eye-opener. It even gave us a picture on what to do and how to produce our programmes. Because we undertook the tour at SAASTA and some of the establishments that deals with science such as Mintek." [sic]

- *Community Host Interview Media Participant 4.*

R7 noted that the relationship between the media organisations and SAASTA is not perceived as strong and it felt as if SAASTA was mostly absent. Also, it seems as if the media organisations did not really know what was really going on.

- *Focus Group 1 Observer Notes*

- ***Output 14: YSTJ Programme Presented to Media Houses***

The respondents were requested to rate the presentation of the YSTJ Programme brief to the host community media organisations and the results are presented below in Figure 72.

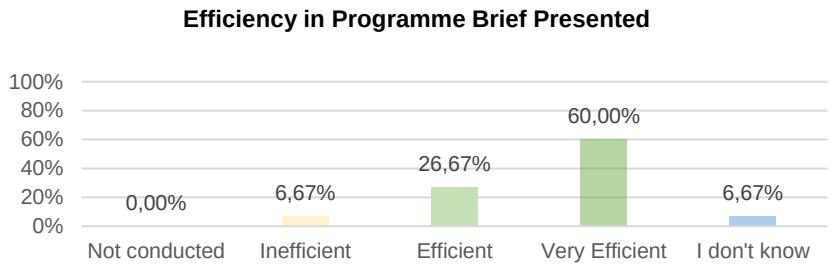


Figure 64: Programme Presentation

A total of 60% of the respondents rated the programme brief presented to the respective community media organisations as being very efficient, while 6.67% indicated that the brief was not efficient.

The non-host media organisations were asked whether they were aware of the programme and if they were, whether they would be interested in hosting interns.

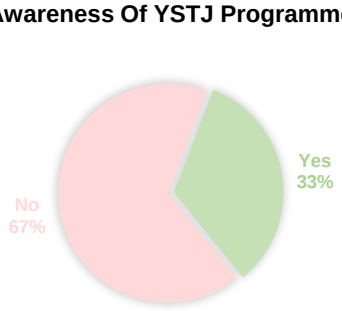


Figure 65: Non-host Awareness and Interest

The majority of the non-host media stations (67%) indicated that they were not aware of the YSTJ programme; however, all non-host media organisations (100%) indicated that they would be interested in hosting interns given an opportunity.

- ***Output 15: Community Media Houses Invited to Training and Community Media Journalists Trained***

The host community media organisations were requested to indicate the extent that the programme contributed training of their journalists. Similarly, non-host media organisations were requested to indicate if they have ever participated in SAASTA organised workshops.

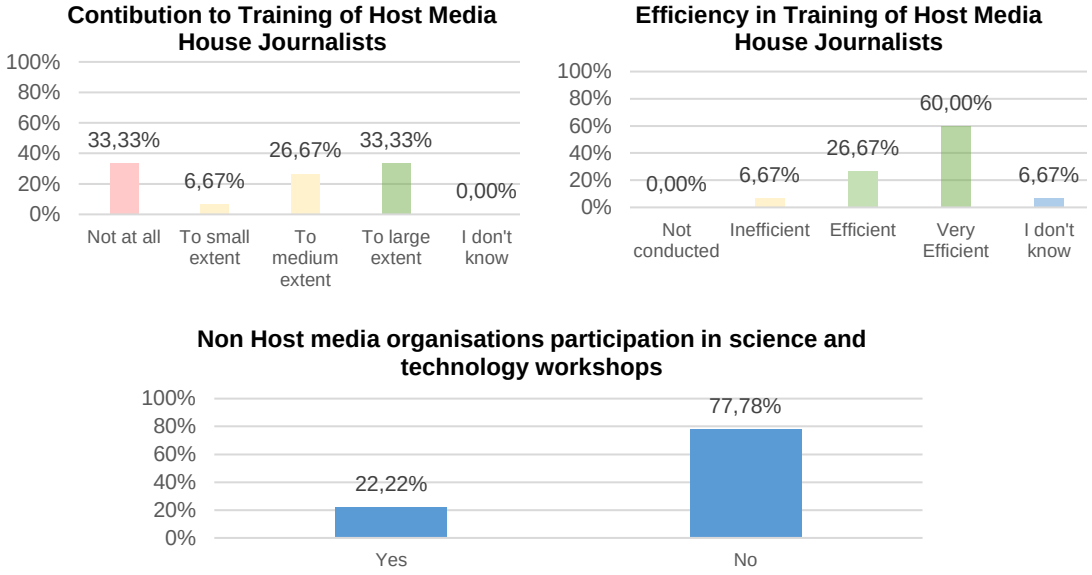


Figure 66: Host Training

A total of 33.33% of host media organisations indicated that the programme contributed to the training of the community media organisations and in-organisations journalist to a large extent, this was followed by 26.67% and 6.67% of respondents which indicated it contributed to the training to a medium and a small extent, respectively. Likewise, 33.33% indicated that either no training was conducted or the programme did not contribute at all. Of those that responded, 60% of the non-media organisations indicated that the process was very efficient, whereas 6.67% indicated that it was inefficient.

5.4. Detailed Analysis of Efficiency and Effectiveness: Objective 4 - The Communication of Specific Demonstrated DSI-funded Technologies and General Science Stories in a Variety of Local Languages

The fourth objective of this study focused on the communication of specific demonstrated DST-funded technologies and general science stories in a variety of languages to local communities. The expected outputs included tasks such as the coverage of stories focusing on DSI-funded technologies and coverage on science topics in a variety of local languages.

g. Outcome 7: Increased Number of Stories on DST-Funded Technologies

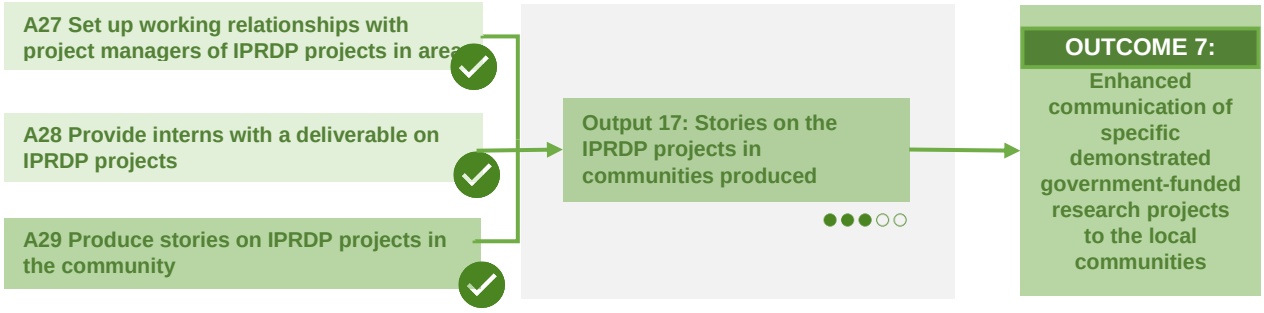


Figure 67: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 7

- ***Output 17: Stories on the IPRDP Projects in Communities Produced***

Interns were expected to produce media on IPRDP projects in communities to enhance communication of government-funded research projects.

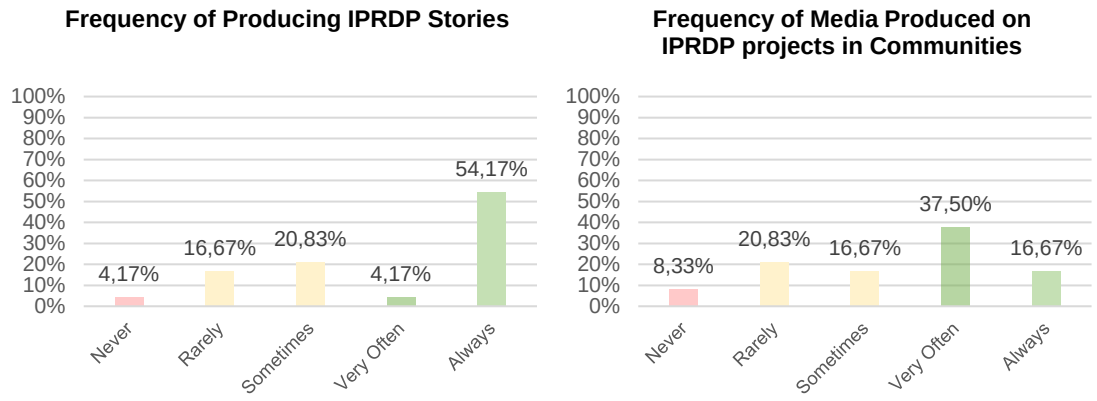


Figure 68: IPRDP Reporting

It is indicative that the largest proportion of interns was always able to produce IPRDP stories (54.17% and only 4,17% said never. That being said, the largest proportion of interns indicated that they were able to always (16.67%) or very often (37.50%) produce stories on IPRDP projects. But 8.33% responded and said they never produced media of IPRDP projects in communities.

In addition, interns were allocated a target for IPRDP projects and the desktop study revealed that a total of 107 stories were produced during the three-year period.

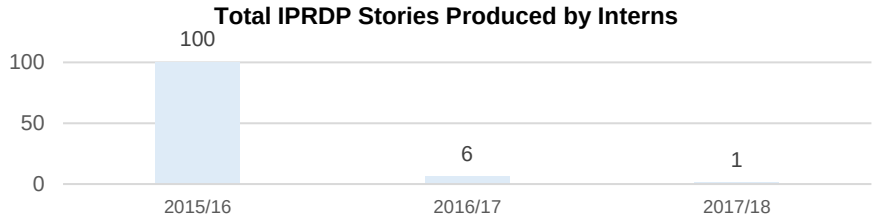


Figure 69: IPRDP Media

A desktop study revealed that the decrease in the total IPRDP stories produced was as a result of the respective projects reaching their end of life cycle.

h. Outcome 8: Increased Number of Science Topics Covered and Messages Relayed through Stories Produced in Local Languages

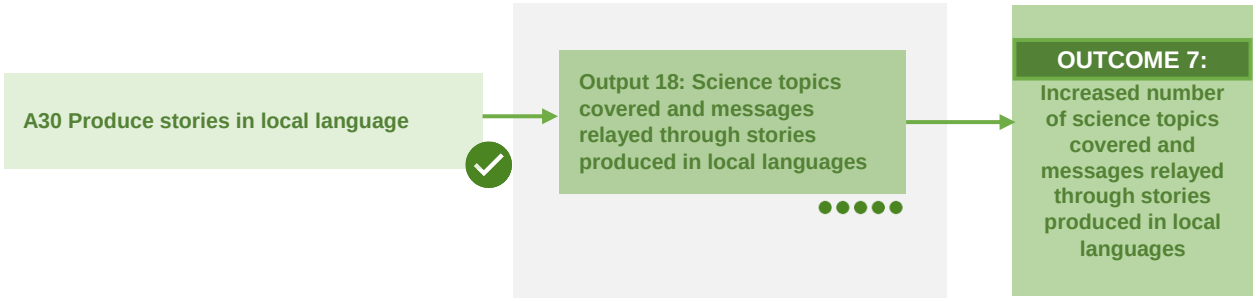
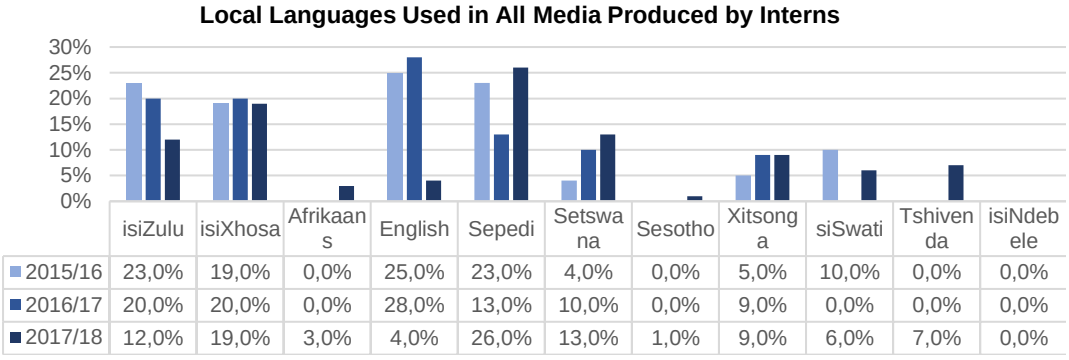


Figure 70: Project Efficiency and Effectiveness: Detailed Analysis of Outcome 7

- ***Output 18: Science Topics Covered and Messages Relayed through Stories Produced in Local Languages***

Interns were expected to produce science and technology media in one or more of the 11 official languages of South Africa. The desktop study indicates that coverage of all official languages grew from three languages in the first year (2015/16) to all official languages being included by the end of the 2017/2018 financial year.



	isiZulu	isiXhosa	Afrikaans	English	Sepedi	Setswana	Sesotho	Xitsonga	siSwati	Tshivenda	isiNdebele
2015/16	23,0%	19,0%	0,0%	25,0%	23,0%	4,0%	0,0%	5,0%	10,0%	0,0%	0,0%
2016/17	20,0%	20,0%	0,0%	28,0%	13,0%	10,0%	0,0%	9,0%	0,0%	0,0%	0,0%
2017/18	12,0%	19,0%	3,0%	4,0%	26,0%	13,0%	1,0%	9,0%	6,0%	7,0%	0,0%

Figure 71: Local Languages in Media

There was a gradual increase of stories produced in a variety of languages, covering at least nine of the 11 languages in the country with the highest coverage in Sepedi of 26% (representing 300) in year three and the least in isiNdebele at 0% (representing 1 story) only covered.

Interns were also requested to indicate the frequency with which they were able to produce stories with a particular focus on government-funded innovation projects in a local language other than Afrikaans and/or English.

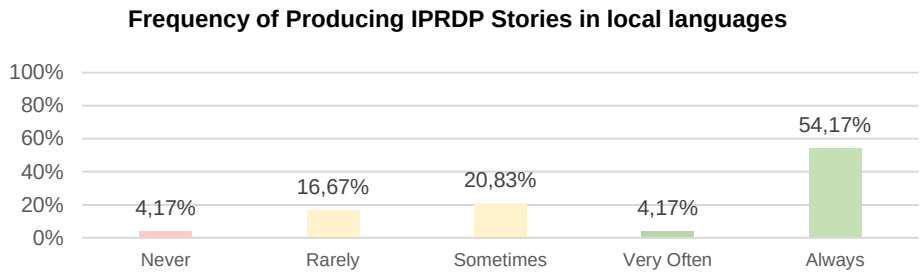


Figure 72: IPRDP Stories in Local Languages

The majority of the participants (58.34%) indicated that they were able to produce IPRDP stories in a local language always or often. Only 20,84% indicated that they rarely or never covered these stories in local languages.

"[The value of the programme] demonstrated that science and technology information can be produced and shared in African languages, contributing to community information and knowledge wealth" [sic]

- *Host Community Media Online Participant 12*

"Originally I am Xhosa, and I was working in an IsiZulu Newspaper, so I would say there was a language barrier of some sort because I had to write my stories in IsiZulu and there are language rules, so it was a bit of a challenge especially with the Science Terminology."

- *Focus Group 2 Participant P007*

6. Lessons Learned, Limitations, and Recommendations

In this section, the lessons learned from the impact study on the YSTJ internship programme are presented. These lessons learned are based on the main research questions, the results chain, and the data analysis and interpretation, as discussed in sections 5 and 6. In section 1, the purpose of this study was stated as an exploration of factors related to the impact of the YSTJ programme. The focus was on establishing the impact of the YSTJ programme on a group of South African youth graduates and community media organisations who participated in the programme and finally providing recommendations for consideration by programme managers.

6.1. Summary of the Findings

The findings of the DSI-SAASTA YSTJ internship programme impact evaluation study have been grouped based on the objectives highlighted in the results chain framework as adopted. The lessons learned are distilled and presented as summaries derived from the analysis and interpretation of data gathered.

6.1.1. DSI, through SAASTA, recruited South African youth and community media organisations to become part of the science journalism programme.

- Both the interns and community media organisations were crucial in the development of science journalism skills in youth and enhanced career opportunities within the sector. Science, technology, engineering, and mathematics (STEM) graduates only made up 8% of the interns who participated in the programme. Therefore, the participation of STEM graduates in the programme is still low.
- Although the YSTJ programme focused on traditional community media organisations, such as print and broadcast, there was participation from digital/online media organisations as well.
- The majority of non-host community media organisations expressed interest in participating in the programme. These were participants specifically from Western Cape and Mpumalanga.

6.1.2. The induction provided by SAASTA is beneficial to both interns and hosts, however, there is a need to create an enabling environment for the interns to implement what they have learned once they are placed at the respective community media organisations.

6.1.3. There is also an indication that training should be extended beyond the introductory phase of the programme. Once-off training is not sufficient to equip the media organisations with the requisite skills to provide support and mentorship to their interns.

- The majority of the interns were dissatisfied with the type of mentorship received during their participation in the internship programme.

- The interns were of the view that the mentors were often not available to provide guidance and support. However, there was a general indication that the interns were satisfied with the type of exposure they received, especially to relevant scientists and experts in the topics that they were producing stories on.
- There is a view that those responsible for mentoring interns at various community media organisations need to be provided with more training on how to provide support and adequate mentorship to the interns who are placed at their respective media organisations.

6.1.4. SAASTA provided the media organisations with various requisite resources. However, there is an indication that although the resources were provided, the interns were not always prioritised for their use, especially for the production of science journalism stories.

6.1.5. There is a need to skill full-time community media staff members with science journalism and mentoring skills to enable them to impart the skills to the interns. In addition, there is a need to start growing science journalism by increasing collaboration with other community media organisations.

6.1.6. The YSTJ programme enhanced interest in science and technology in local communities and contributed to the recognition of indigenous and grassroots innovation in the communities where the host media organisations are located.

- This was realised as a result of community members interacting with community media organisations on science and technology topics

6.1.7. There is a need to provide regular feedback to interns with regard to the content they have developed.

- The feedback should be provided internally by the community media organisations that host them and by SAASTA or its appointed representative(s).

6.1.8. The majority of community media organisations that participated in the study indicated that they do not have dedicated science journalism slots. However, all the community media organisations indicated that they would be interested in introducing such a slot.

6.1.9. By participating in the YSTJ programme, the interest of the community media organisations to report on science and technology stories was enhanced.

6.1.10. There is an indication from both interns and community media organisations that the coverage of DSI or other government-funded through the YSTJ programme was achieved.

- When it comes to the use of local languages, the programme achieved its mandate to a large extent, as the community media organisations provided platforms to report in a variety of vernacular languages, depending on the location of the hosting community media organisation.

6.1.11. Both the interns and host media organisations representatives proposed their opinions that included

- Allocation of newsroom equipment or resources,
- An improved working environment and
- The upskilling of the personnel responsible for hosting the interns.

In conclusion, the programme was found to be mostly efficient and effective. It was able to address all of its outcomes and it was found that it contributed to a broader impact through positive change.

6.2. Recommendations

Based on the analysis, the following recommendations are made to improve implementation. The recommendations are based on various responses from the delegates, as well as themes identified in qualitative responses.

Identifier	Recommendation
Objective 1: Development of science journalism skills in the youth and enhanced career opportunities	
Recruitment of Interns and community media organisations	More STEM graduates need to be recruited into the programme to create a balance between journalism and STEM graduates
	There is a need to expand into provinces like the Western Cape and Free State
	Invite non-host media organisations for science journalism workshop before recruiting them to participate in the programme
Career opportunities	Recommend the inclusion of some of the previous interns as science journalism mentors, especially those practising science communication
Induction and training for participants	SAASTA needs to work with host community media organisations to create a favourable working environment for interns to enable them to implement what they have learned once they are placed at the respective community media organisations.
	Host community media organisations need to participate regularly in SAASTA's organised host meetings
	Science journalism meetings need to be held annually with host media organisations to discuss developing trends and areas of improvement for the YSTJ programmes
Mentorship for interns	Host media mentors need to be trained regularly on mentorship skills
Exposure to relevant scientists and industry experts	An up-to-date database of relevant industry experts needs to be made available to the interns
Objective 2: Enhanced interest in science and technology in local communities, including the recognition of indigenous and grassroots innovation existing in communities.	
Enhancing Science and Technology interest in local communities	There is a need to encourage interns and host media organisations to continue covering stories that will enhance the recognition of indigenous and grassroots innovation in the communities where the host media organisations are located
	There is a need to encourage interns and host media organisations to continue covering stories that will enhance interest in science and technology in local communities through the YSTJ programme

Identifier	Recommendation
Objective 3: Enhancing the understanding of the importance of science and technology reporting in community media organisations	
Science and technology reporting in community media organisations	There be is a need to provide regular feedback to the interns with regard to the content they have developed. The feedback should be provided internally by the community media organisations that host them and also by SAASTA or its appointed representative(s).
	There is a need to encourage interns and host media organisations to continue covering science and technology stories, but with more emphasis on the quality of the content rather than quantity.
	Host community media organisations without science and technology slots should be provided with support to introduce such slots in the future
	There should be an increase in the provision of qualitative feedback to the interns to improve their science journalism skills
Objective 4: The communication of DSI funded technologies and general stories in a variety of local languages	
Communication of DSI funded projects and use of local languages	Interns must be provided with an updated database of people or organisations responsible for running DSI-funded science and technology projects to maximise coverage on such projects.
Overall Recommendation on programme improvement	
Programme improvement	Community media organisations need to be fully prepared to accommodate interns once under their guidance
	SAASTA needs to investigate ways to make the interns' stay at the community media enjoyable
	Peer comparison on working conditions needs to be made across various media organisations, including other non-media NYS programme hosts to improve the interns' working conditions

Table 3: Recommendations from the YSTJ Programme Impact Evaluation Study