EXAMINATIONS AND ASSESSMENT CHIEF DIRECTORATE
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2018 NSC CHIEF MARKER'S REPORT

SUBJECT:	**AGRICULTURAL SCIENCES**
PAPER:	**PAPER 2**
DURATION OF PAPER:	**2 ½ HOURS**
DATES OF MARKING:	**01 DECEMBER TO 14 DECEMBER**

SECTION 1: (General overview of Learner Performance in the question paper as a whole)

General Comments

The performance of candidates in **AGRICULTURAL SCIENCES 2018 PAPER 2** was fair as it recorded a significant increase in average performance compared to that recorded in the past. There is also a slight increase in the number of candidates obtaining level 7, and those obtaining level 6 as compared to the past trend analysis. Question 1 and Question 2 were fairer than question 3 and 4 as candidates scored higher marks in these questions as compared to 3 and 4 questions. Above 60 percent of learners were able to master the agricultural terminology and concepts.

Questions formulated from tabulated data, scenarios, flow charts and graphical data were problematic to most candidates which affected their response on interpretation of graphs, tables, and scenarios.

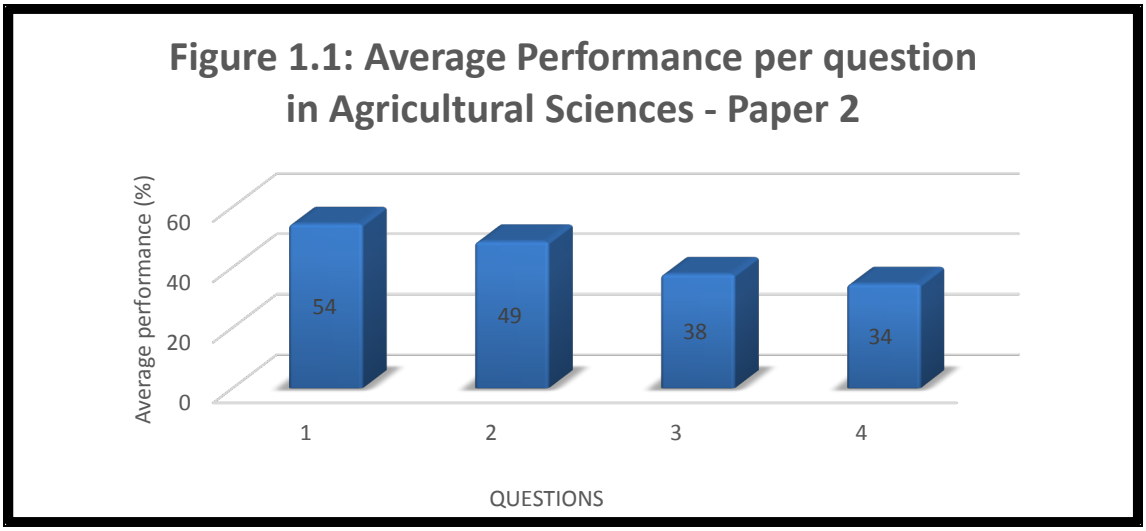
Embedded questions requiring critical application of agricultural principles and motivation were poorly answered by most candidates indicating a lack of exposure to these types of questions in their class.

Most learners were giving incomplete responses to some questions which result in them failing to get all marks because of lack of full explanation of the concept.

The responses of learners on external forces affecting agricultural sector shows that they lack basic knowledge of the general economic issues of the day.

Analysis of Learner performance in individual Questions in Agricultural Sciences Paper 2

The following graph is based on the data from a random sample of candidates. While this graph may not accurately reflect national averages, it is useful in assessing the relative degree of challenge of each question as experienced by 2018 candidates.



From the data above it can be observed that, 54 % of the candidates managed to pass question 1 which is Section A. Question 4 which is based on Basic Agricultural genetics recorded the lowest average pass percentage of 34% whilst candidates responded better in question 2 than question 3.

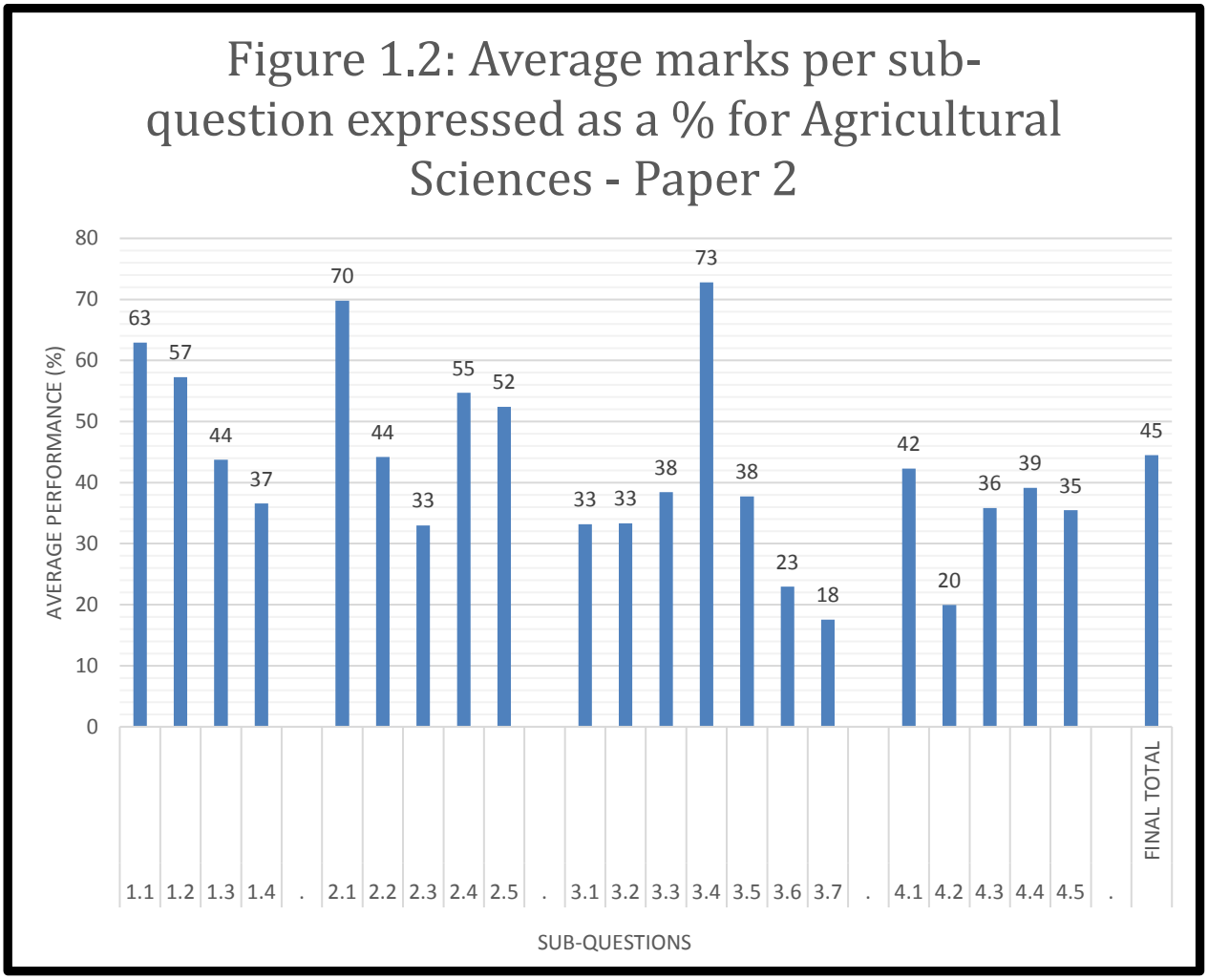


Figure1.2 above give a reflection on how candidates performed per sub-question. Sub-question 3.7 and 4.2 were poorly performed, whilst candidates did very well in sub-question 2.1 and 3.4.

SECTION 2: Comment on candidates' performance in individual questions

(It is expected that a comment will be provided for <u>each question</u>).

QUESTION 1: SHORT QUESTIONS (AGRICULTURAL MANAGEMENT AND GENETICS)
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
(SECTION A) QUESTION 1 Short Questions **Agricultural Management and Genetics** This was the best well answered question compared to all other questions This shows that the candidates were able to master the subject concepts and were able to apply them where they fit well. Some sub questions were not well answered by almost 40 % of the candidates due to various errors and misconceptions noted down.

Common errors and misconceptions in question 1

a) In Qn1.1 Candidates confuse the business plan as the tool used to evaluate the proposed enterprise instead of a SWOT analysis tool.
b) High order multiple choice questions of combination of various options are still challenging to learners (Question 1.1.4 and 1.1.6) (4marks)
c) In Qn1.3 Candidates had to give an agricultural term for a given statement. Overall, the performance was fair though the memorandum accepted only the correct terminology- no examples were accepted. In Qn1.3.1, candidates were not able to identify segmentation as the market approach that divides the market into smaller groups, instead they wrote multi-segment and niche marketing.
d) Question 1.3.2 was requiring for "The law of Diminishing returns) which is a phrase and the instructions were requiring learners to think of an economic term which results in most candidates writing incomplete answers like "diminishing" alone.
e) Candidates lost one mark in 1.4.1 as they were writing transportation instead of Distribution as the process of transporting goods along the marketing chain
f) Candidates failed to correctly differentiate between heredity and heritability
g) Quite several learners are losing marks due to spelling errors, instead of **atavism** they wrote *activism* which means something else.

Suggestions for improvement

a) Basic Knowledge of the subject terminology remains very important and is the main determinant of candidate's performance. Candidates should be explicitly taught the subject terminology to ensure that they are well acquainted with essential subject terminology.
b) Assessment of terminology could be made interesting for learners through the introduction of speed tests on crossword puzzles, matching items, one-word answers and multiple-choice items that can be incorporated into daily teaching.
c) Old methodology of pasting charts on the walls with glossary of terms for each topic is very useful as it reminds learners about the agricultural terminology each and every day.
d) Learners should also be encouraged by their teachers to prepare a concept bank for each topic and be encouraged to know the importance of concepts in mastering the subject.

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

In general, this question was fairly answered by candidates. The average percentage performance for question 2 was 47% slightly above average 44%. Learners could have maximised on this question but due to the common errors and misconceptions outlined below they could not take advantage of this question to score more marks.

Common errors and misconceptions

a) In Qn2.1.2 candidates struggled to interpret the relationship between price, demand and supply from the tabulated data. Learners failed to understand that the given statistics in the table were showing the influence of price on demand and supply not the other way around. While a significant number of learners got this question correct. A large number could not score full marks because they tended to simply narrate how price, demand and supply were increasing with time instead of relating the three.
b) In Qn 2.2.1 most learners could not relate the information from the table to packaging, instead most responded by giving grading as the answer, due to the information provided by the table. Learners failed to link the information provided to marketing functions given in the CAPS document.
c) Qn 2.2.2 In this question learners tended to answer the question generally by giving factors used to grade agricultural produce instead of providing the ones given in the table. This shows that learners still struggle to deal with data response questions.
d) Qn 2.2.3 In this question learners also answered generally. Giving general factors hampering the marketing of peaches instead of deducing a factor from the information given in table.
e) Qn 2.3.1 B- Most learners failed to give the correct marketing channel, most of them giving fresh produce markets as the answer instead of direct marketing. Learners did not read the question they quickly decided on the answer after reading the part of the question which talks about fresh produce markets ignoring the other part with relates to local retailers.
f) Q2.3.2 The majority of the candidates are getting this question; however, a significant number of learners is not scoring full marks in this question due to failure to use subject terminology which has a net effect of making their answers ambiguous.
g) Qn 2.3.3 The responses of candidates on the advantages of contractual sales show that learners do not understand the concept of contract farming. b
h) Qn 2.3.4 While candidates show appreciation of cooperative and free-marketing systems, the cannot distinguish the two in terms of pricing. Learners are simply giving general differences between the two.
i) Qn 2.4.2 Very few candidates were able to derive the qualities of an entrepreneur from given descriptions of entrepreneurial qualities. Learners ended up copying the descriptions given in the table.

j) Very few learners are scoring maximum on the graph. Most of the candidates are scoring between 3 and 4 marks out of the possible 6. Learners are losing marks due to the following:

1 Candidates did not follow the instruction to draw a bar graph on plant products only instead they included both animal and plant products.

2. Learners failed to calibrate the Y axis.

Suggestions for improvement

Provide suggestions for improvement in relation to Teaching and Learning

a) Teachers should expose learners to different text books for diagrams and use flow diagrams, tables and scenarios during assessment. Teachers should also expose learners to all types of questions that need an application and instructional questions.
b) Learners need to be given frequent assessment on data response questions, e.g. scenarios and tables. They should also be taught to translate information from tables and graphs into words.
c) Learners should also be drilled on the skill of drawing graphs especially calibration and how they can get all marks.
d) Various assessments given to learners should contain all cognitive levels which stimulates learners to critically analyze scenarios and be able to organize knowledge related to the topic being assessed so that there will be clear interpretation of events.
e) Emphasis should be given to candidates on various ways of approaching scenarios. Teachers should explain to their learners that scenarios are put to give a stimulus to learners about the topic the question is addressing not necessarily that all responses should come from the scenarios, flow charts/diagrams and pictures.
f) The utter shortage of teaching and learning material does reflection on the performance of learners in deep rural and semi-rural communities of our country. This will continue to negatively affect matric results in our province. Shortages include textbooks, Overhead Projectors, funds for excursions to relevant institutions etc.

QUESTION 3: PRODUCTION FACTORS

Performance in this question was slightly below average, even though there were instances of exceptionally good answering of some sub-questions. The performance could be attributed to the inability of candidates to critically analyse scenarios and case studies and correlate it to subject content.

Common errors and misconception

a) Qn3.1.1 posed a challenge to some candidates as they confused the economic functions of land with

economic characteristics of land. Subsequently, candidates could not link the pictorial illustrations with the economic functions of land.

b) In QN 3.1.2 very few candidates realized that the question was referring to the various scientific methods that can be applied to increase in land productivity to increase food supply to the increasing human population.

c) In Qn3.2.2 many learners assumed that the economic characteristic that was represented by the statement that "the farmer has lived and produced on this farm for 50 years" is related to land has a fixed location or it is immovable though the statement was explaining the durability nature of land. Misinterpretation of descriptive statements on economic characteristics of land affected candidates in 3.2.3 as they wrote "Land can be bought and sold".

d) In Qn3.3.1 Most candidates associated non-repetitive tasks with seasonal workers.

e) Candidates found it challenging to state characteristics of permanent workers in Qn3.3.2, as they end up giving general characteristics for all farm workers like they get salary, they are skilled, and they sign a contract and failed to explain the duration of the contract for it to differ with temporary workers.

f) Qn3.4 was well answered by most candidates though few learners failed to provide solutions to solve problems that affect labour productivity which were identified in Qn3.4.1. Again, in Qn3.4.3 candidates failed to extract from the given scenario the reasons why farms lose workers to other industries, they end up stating all other generic reason which were not corresponding to the scenario.

g) In Qn3.5.1 candidates struggled to critically analyse the scenario as a guidance to sources of capital as they end up giving other sources of capital not mentioned on the scenario. Furthermore, candidate could not differentiate between financial institutions and sources of capital.

h) In Qn3.5.4 majority of learners were able to use a formula to calculate income though some learners were confused by the instruction which required them to calculate profit per month from egg sales.

i) Most candidates could not score all marks from Qn3.7. Questions on issues that concerning everyday life seems to be a major stumbling block to candidates who are from remote areas. Most of these candidates displayed limited insight into current trending issues affecting South Africa agricultural economic sector.

Suggestions for improvement

a) Teachers are once again advised to regularly expose learners to data response questions in their assessment as these types of questions will encourage learners to be creative in thinking of valid responses. However, teachers must make learners be aware that their responses must be valid, based on fact, and, in line with the requirements of the question.

b) Teachers should focus on all aspects of content as listed in both the CAPS and the Examination Guidelines for Agricultural Sciences. Furthermore, teachers should encourage learners to also be

updated with current issues that affect agricultural sector. Where information is not clear in textbooks, educators are encouraged to do intensive research and compile class notes for those topics.

c) Teachers should also use real life practical examples for the learners to be able to apply subject knowledge in solving real issues. Practical examples help all learners regardless of their geographical setup to know the real application of the subject knowledge weather they are in urban areas or in rural setup.

Question 4 Basic Agricultural Genetics

Question 4 was poorly performed compared to all other questions. As has been the trend in the previous year's question 4 remain the most challenging question to all agricultural learners. This worrying performance in this question showed a lack of knowledge and understanding of genetics concepts. Most learners leave genetics questions un-attempted which shows that there is much content gap in knowledge and understanding of basic genetics concepts.

Common errors and misconceptions

a) In Question 4.1.2 Candidates struggled to give the correct phenotypic ratio of F2 generation as they were only writing the ratio (3:1/24:8) without specifying the phenotypes or the characteristic that is white and brown colour.

b) Candidates' responses on Qn4.1.3 reflected that they still struggle to differentiate between a dihybrid cross and a mono-hybrid cross. Most candidates drew the punnet square, but they struggled to come up with the correct gametes as they provided the gametes of a dihybrid cross.

e) Qn4.2 was poorly answered by majority of candidates. It seems that the challenge in this question lies in the interpretation of the flow chart representing various breeding systems as it required critical thinking and linkages. The candidates' responses show that it was difficult for them to use the flow chart to arrive to the choice of various breeding systems. Candidates who missed Qn4.2.1 also missed the follow up sub-questions 4.2.2 and 4.2.3 which were related to the choices of breeding systems made in Qn4.2.1

f) In Qn4.4.1 The candidates thought that the types of variation were stated in the scenario because of the terminology used in questioning, the use of the term "identify" gave a wrong stimulus to learners to think that the answers were in the scenario. This question was also embedded causing learners who missed Qn4.4.1 to also miss Qn4.4.2.

Suggestions for improvement

a) The Subject should also be incorporated in e-learning programs like telematics and SABC TV programs which helps learners to have a clear understanding of Agricultural genetics.

b) Teachers should in their teaching, pay special attention to basic crossing, genetic concepts and terminology.

c) Emphasis should be given to the pattern of inheritance that leads to different genotypes: incomplete dominance, co-dominance, complete dominance, multiple alleles, polygenic inheritance and epistasis.

d) The teaching of genetics should be enhanced by providing practical examples within the learning site, such as plants, flowers and animals.