

Traditional Farming System in Africa

A. By tradition land in Luapula is not owned by individuals, but as in many other parts of Africa is allocated by the headman or head woman of a village to people of either sex, according to need. Since land is generally prepared by hand, one ulupwa cannot take on a very large area; in this sense, the land has not been a limiting resource over large parts of the province. The situation has already changed near the main townships, and there has long been a scarcity of land for cultivation in the Valley. In these areas registered ownership patterns are becoming prevalent.

B. Most of the traditional cropping in Luapula, as in the Bemba area to the east, is based on citemene, a system whereby crops are grown on the ashes of tree branches. As a rule, entire trees are not felled but are pollarded so that they can regenerate. Branches are cut over an area of varying size early in the dry season and stacked to dry over a rough circle about a fifth to a tenth of the pollarded area. The wood is fired before the rains and in the first year planted with the African cereal finger millet (*Eleusine coracane*).

C. During the second season, and possibly for a few seasons more the area is planted to variously mixed combinations of annuals such as maize, pumpkins (*Telfiria occidentalis*) and other cucurbits, sweet potatoes, groundnuts, *Phaseolus* beans and various leafy vegetables, grown with a certain amount of rotation. The diverse sequence ends with vegetable cassava, which is often planted into the developing last-but-one crop as a relay.

D. Richards (1969) observed that the practice of citemene entails a definite division of labour between men and women. A man stakes out a plot in an unobtrusive manner since it is considered provocative towards one's neighbours to mark boundaries in an explicit way. The dangerous work of felling branches is the men's province and involves much pride. Branches are stacked by the women and fired by the men. Formerly women and men cooperated in the planting work,

but the harvesting was always done by the women. At the beginning of the cycle little weeding is necessary, since the firing of the branches effectively destroys weeds. As the cycle progresses weeds increase and nutrients eventually become depleted to a point where further effort with annual crops is judged to be not worthwhile: at this point the cassava is planted, since it can produce a crop on nearly exhausted soil. Thereafter the plot is abandoned, and a new area pollarded for the next citemene cycle.

E. When the forest is not available – this is increasingly the case nowadays – various ridging systems (ibala) are built on small areas, to be planted with combinations of maize, beans, groundnuts and sweet potatoes, usually relayed with cassava. These plots are usually tended by women, and provide subsistence. Where their roots have year-round access to water tables mango, guava and oil-palm trees often grow around houses, forming a traditional agroforestry system. In season some of the fruit is sold by the roadside or in local markets.

F. The margins of dambos are sometimes planted to local varieties of rice during the rainy season, and areas adjacent to vegetables irrigated with water from the dambo during the dry season. The extent of cultivation is very limited, no doubt because the growing of crops under dambo conditions calls for a great deal of skill. Near towns, some of the vegetable produce is sold in local markets.

G. Fishing has long provided a much-needed protein supplement to the diet of Luapulans, as well as being the one substantial source of cash. Much fish has dried for sale to areas away from the main waterways. The Mweru and Bangweulu Lake Basins are the main areas of year-round fishing, but the Luapula River is also exploited during the latter part of the dry season. Several previously abundant and desirable species, such as the Luapula salmon or mpumbu (*Labeo altivelis*) and pale (*Sarotherodon machochir*) have all but disappeared from Lake Mweru, apparently due to mismanagement.

H. Fishing has always been a far more remunerative activity in Luapula than crop husbandry. A fisherman may earn more

in a week than a bean or maize grower in a whole season. I sometimes heard claims that the relatively high earnings to be obtained from fishing induced an 'easy come, easy go' outlook among Luapulan men. On the other hand, someone who secures good but erratic earnings may feel that their investment in economically productive activity is not worthwhile because Luapulans fail to cooperate well in such activities. Besides, a fisherman with spare cash will find little in the way of working equipment to spend his money on. Better spend one's money in the bars and have a good time!

I. Only small numbers of cattle or oxen are kept in the province owing to the prevalence of the tsetse fly. For the few herds, the dambos provide subsistence grazing during the dry season. The absence of animal draft power greatly limits peoples' ability to plough and cultivate land: a married couple can rarely manage to prepare by hand-hoeing. Most people keep freely roaming chickens and goats. These act as a reserve for bartering, but may also be occasionally slaughtered for ceremonies or for entertaining important visitors. These animals are not a regular part of most peoples' diet.

J. Citemene has been an ingenious system for providing people with seasonal production of high-quality cereals and vegetables in regions of acid, heavily leached soils. Nutritionally, the most serious deficiency was that of protein. This could at times be alleviated when fish was available, provided that cultivators lived near the Valley and could find the means of bartering for dried fish. The citemene/fishing system was well adapted to the ecology of the miombo regions and sustainable for long periods, but only as long as the human population densities stayed at low levels. Although population densities are still much lower than in several countries of South-East Asia, neither the fisheries nor the forests and woodlands of Luapula are capable, with unmodified traditional practices, of supporting the people in a sustainable manner.

Overall, people must learn to intensify and diversify their productive systems while yet ensuring that these systems will remain productive in the future when even more people will need food. Increasing overall production of food, though a

vast challenge in itself, will not be enough, however. At the same time, storage and distribution systems must allow everyone accesses to at least a moderate share of the total.

Questions 1-4

Complete the sentences below.

Write **NO MORE THAN TWO WORDS** for each answer.

Write your answers in boxes 1-4 on your answer sheet.

1. In Luapula land allocation is in accordance with.....
2. The citemene system provides the land with where crops are planted.
3. During the second season, the last planted crop is.....
4. Under suitable conditions, fruit trees are planted near.....

Questions 5-8

Classify the following items with the correct description.

Write your answers in boxes 5-8 on your answer sheet.

- A fish
- B oxen
- C goats

5. be used in some unusual occasions, such as celebrations.
6. cannot thrive for being affected by the pests.
7. be the largest part of creating profit.
8. be sold beyond the local area.

Questions 9-12

Do the following statements agree with the information given in Reading Passage 1?

In boxes 9-12 on your answer sheet, write

- | | |
|------------------|--|
| TRUE | If the statement agrees with the information |
| FALSE | If the statement contradicts the information |
| NOT GIVEN | If there is no information on this |

9. People rarely use animals to cultivate the land.
10. When it is a busy time, children usually took part in the labor force.
11. The local residents eat goats on a regular time.
12. Though citemene has been a sophisticated system, it could not provide enough protein.

Question 13

Choose the correct letter, A, B, C or D.

Write the correct letter in the box 13 on your answer sheet.

What is the writer's opinion about the traditional ways of practices?

- A They can supply the nutrition that people need.
- B They are not capable of providing adequate support to the population.
- C They are productive systems that need no more improving.
- D They will be easily modified in the future.

Can we call it “ART”

Life-Casting and Art

A. When these life-castings were made in the 19th century, no one thought of them as art. But, if critics today can hail Tracey Emin’s unmade bed and the lights going off and on in a gallery as masterpieces of some kind, then shouldn’t these more skillful and profoundly strange works have a greater claim on our attention?

B. Art changes over time; what is art changes, too. Objects intended for devotional, ritualistic or recreational use are re-categorised, by latecomers from another civilisation who no longer respond to these original purposes. Where would New Yorker cartoon be without Lascaux gags in which one bison-painter makes anachronistically “artistic” remarks to another” What also happens is that techniques and crafts judged non-artistic at the time are reassessed?

C. In the 19th century, life-casting was to sculpture what photography was to painting; and both were viewed as cheating short-cuts by the senior arts. Their virtues – of speed and unwavering realism – also implied their limitations; they left little or no room for the imagination. For many, life-casting was an insult to the sculptor’s creative gesture; in a famous lawsuit of 1834, a moulder whose mask of the dying Napoleon had been reproduced and sold without his permission, was judged to have no rights in the image – in other words, he was specifically held not to be an artist. Rodin said of life-casting: “It happens fast, but it doesn’t make art.” Others feared that the whole canon of aesthetics might be blown off course if too much nature was allowed in, it would lead art away from its proper pursuit of the ideal.

D. Gauguin, at the end of the century, worried about future developments in photography: if ever the process went into colour, what painter would labour away at a likeness with a brush made from squirrel-tail? But painting has proved

robust. Photography changed it, of course, just as the novel had to reassess narrative after the arrival of the cinema. But the gap between the senior and junior arts was always narrower than the die-hards implied: painters have always used technical back-up – studio assistants to do the boring bits, cameras Lucida and Obscura; while apparently lesser crafts involve great skill, thought, preparation, choice, and – depending on how we define it – imagination. Life-casting was complex, technical work, as Benjamin Robert Haydon discovered when he poured 250 litres of plaster over his black model Wilson and nearly killed him.

E. Time changes our view in another way, too. Each new art movement implies a reassessment of what has gone before; what is done now alters what was done before. In some cases, this is merely self-serving, with the new is using the old to justify itself: Look how all of that points to this; aren't we clever to be the culmination of all that has gone before? But usually it is a matter of re-alerting the sensibility, reminding us not to take things for granted; every so often we need the aesthetic equivalent of a cataract operation. So there are many items in this show – innocent bit-players back in the last half of the 19th century – which would sit happily nowadays in a commercial or public gallery. Many curators would probably put in for the stunning cast of the hand of a giant from Barnum's circus.

F. The initial impact is on the eye, in the contradiction (which Mueck constantly exploits) between unexpected size and extreme verisimilitude. Next, the human element kicks in: you note that the nails are dirt-encrusted – unless this is the caster's decorative addition – and the paddy fingertips extend far beyond them. (Was the giant an anxious gnawer, or does giantism mean that the flesh simply outgrows the nails?) Then you take in the element of choice, arrangement, art if you like – the neat, pleated, buttoned sleeve end that gives the item balance and variation of texture. This is just a moulded hand, yet the part stands utterly for the whole: and, as an item on public display, it reminds us, slyly, poignantly, of the full-size original who in his time was just as much a victim of gawping. We are not a long way from Degas's *La Petite Danseuse* (which, after all, one critic said should be in the Dupuytren pathology museum); though we are nearer to contemporary art that lazily gets called cutting-edge.

G. Barthes proclaimed the death of the author, the liberation of the text from authorial intention, and the consequent empowerment of the reader; he announced this, needless to say, in a text written with a particular intention in order to communicate something very specific to a reader. An own goal of Keith Weller proportions. But what doesn't work for literature works much better for art. Pictures do float free of their creators' intentions; over time, the "reader" does become more powerful. Few of us can look at a medieval altarpiece as its painter "intended", we believe too little and aesthetically know too much, so we recreate, we find new fields of pleasure in the work. Equally, the lack of artistic intention of Paul Richer and other forgotten craftsmen who brushed oil on to flesh, who moulded, cast, decorated and primed a century and more ago is now irrelevant.

H. What counts is the surviving object and our living response to it. The tests are simple: does it interest the eye, excite the brain, move the mind to reflection, and involve the heart; further, is an apparent level of skill involved? Much currently fashionable art bothers only the eye and briefly the brain, but it fails to engage the mind or the heart. It may, to use the old dichotomy, be beautiful, but it is rarely true to any significant depth. One of the constant pleasures of art is its ability to come at us from an unexpected angle and stop us short in wonder. That is what many of the objects in this show do. The Ataxic Venus doesn't make Ron Mueck's Dead Dad any less intense and moving an image; but she does offer herself as a companion, precursor, and, yes, rival.

Questions 14-18

The Reading Passage has seven paragraphs A-H

Which paragraph contains the following information?

Write the correct letter A-H, in boxes 14-18 on your answer sheet.

- 14. Technicians do boring work**
- 15. A trial on a famous figure's mask in the 19th century**
- 16. The intention from the author is claimed matters in Art**

- 17 How to assess an art
- 18 Detailed depiction of an earlier work

Questions 19-24

Do the following statements agree with the information given in Reading Passage 2?

In boxes 19-24 on your answer sheet, write

- YES If the statement is true
- NO If the statement is false
- NOT GIVEN If the information is not given in the passage

- 19. The intention of using artistic objects will change as time pass.
- 20. In the 19th century, people appreciate the fast speed and realism of living casting.
- 21. Rodin indicated that slow pace would improve the artistic quality of the casting.
- 22. The importance of painting dropped as the development of photographs.
- 23. Lifecasting requires less skill and cost than painting.
- 24. Emerge of new art makes people recognise the meaning of art again.

Question 25 and 26

Choose the correct letter, A, B, C or D.

Write your answers in boxes 25-26 on your answer sheet.

- 25. Why the *hand of a giant* from Barnum's circus attract people's attention in the first place?

A details and the human element

- B size and realism**
- C texture and color**
- D imagination and intuition**

26. What requirement does it depend on when judging if an object is “art”?

- A audience status**
- B fresh or old condition**
- C lasting period**
- D public response**

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Honey bees in trouble

Can native pollinators fill the gap?

A. Recently, ominous headlines have described a mysterious ailment, colony collapse disorder (CCD), that is wiping out the honeybees that pollinate many crops. Without honeybees, the story goes, fields will be sterile, economies will collapse, and food will be scarce.

B. But what few accounts acknowledge is that what's at risk is not itself a natural state of affairs. For one thing, in the United States, where CCD was first reported and has had its greatest impacts, honeybees are not a native species. Pollination in modern agriculture isn't alchemy, it's industry. The total number of hives involved in the U.S. pollination industry has been somewhere between 2.5 million and 3 million in recent years. Meanwhile, American farmers began using large quantities of organophosphate insecticides, planted large-scale crop monocultures, and adopted "clean farming" practices that scrubbed native vegetation from field margins and roadsides. These practices killed many native bees outright – they're as vulnerable to insecticides as an agricultural pest – and made the agricultural landscape inhospitable to those that remained. Concern about these practices and their effects on pollinators isn't new – in her 1962 ecological alarm cry *Silent Spring*, Rachel Carson warned of a 'Fruitless Fall' that could result from the disappearance of insect pollinators.

C. If that 'Fruitless Fall' has not-yet-occurred, it may be largely thanks to the honeybee, which farmers turned to as the ability of wild pollinators to service crops declined. The honeybee has been semi-domesticated since the time of the ancient Egyptians, but it wasn't just familiarity that determined this choice: the bees' biology is in many ways suited to the kind of agricultural system that was emerging. For example, honeybee hives can be closed up and moved out of the way when pesticides are applied to a field. The bees are generalist pollinators, so they can be used to pollinate many

different crops. And although they are not the most efficient pollinator of every crop, honeybees have strength in numbers, with 20,000 to 100,000 bees living in a single hive. “Without a doubt, if there was one bee you wanted for agriculture, it would be the honeybee,” says Jim Cane, of the U.S. Department of Agriculture. The honeybee, in other words, has become a crucial cog in the modern system of industrial agriculture. That system delivers more food, and more kinds of it, to more places, more cheaply than ever before. But that system is also vulnerable, because making a farm field into the photosynthetic equivalent of a factory floor, and pollination into a series of continent-long assembly lines, also leaches out some of the resilience characteristics of natural ecosystems.

D. Breno Freitas, an agronomist, pointed out that in nature such a high degree of specialization usually is a very dangerous game: it works well while all the rest is in equilibrium, but runs quickly to extinction at the least disbalance. In effect, by developing an agricultural system that is heavily reliant on a single pollinator species, we humans have become riskily overspecialized. And when the human-honeybee relationship is disrupted, as it has been by colony collapse disorder, the vulnerability of that agricultural system begins to become clear.

E. In fact, a few wild bees are already being successfully managed for crop pollination. “The problem is trying to provide native bees inadequate numbers on a reliable basis in a fairly short number of years in order to service the crop,” Jim Cane says. “You’re talking millions of flowers per acre in a two-to three-week time frame, or less, for a lot of crops.” On the other hand, native bees can be much more efficient pollinators of certain crops than honeybees, so you don’t need as many to do the job. For example, about 750 blue orchard bees (*Osmia lignaria*) can pollinate a hectare of apples or almonds, a task that would require roughly 50,000 to 150,000 honeybees. There are bee tinkerers engaged in similar work in many corners of the world. In Brazil, Breno Freitas has found that *Centris tarsata*, the native pollinator of wild cashew, can survive in commercial cashew orchards if growers provide a source of floral oils, such as by interplanting their cashew trees with a Caribbean cherry.

F. In certain places, native bees may already be doing more than they’re getting credit for. Ecologist Rachael Winfree

recently led a team that looked at pollination of four summer crops (tomato, watermelon, peppers, and muskmelon) at 29 farms in the region of New Jersey and Pennsylvania. Winfree's team identified 54 species of wild bees that visited these crops, and found that wild bees were the most important pollinators in the system: even though managed honeybees were present on many of the farms, wild bees were responsible for 62 percent of flower visits in the study. In another study focusing specifically on watermelon, Winfree and her colleagues calculated that native bees alone could provide sufficient pollination at 90 percent of the 23 farms studied. By contrast, honeybees alone could provide sufficient pollination at only 78 percent of farms.

G. "The region I work in is not typical of the way most food is produced," Winfree admits. In the Delaware Valley, most farms and farm fields are relatively small, each farmer typically grows a variety of crops, and farms are interspersed with suburbs and other types of land use which means there are opportunities for homeowners to get involved in bee conservation, too. The landscape is a bee-friendly patchwork that provides a variety of nesting habitat and floral resources distributed among different kinds of crops, weedy field margins, fallow fields, suburban neighborhoods, and semi-natural habitat like old woodlots, all at a relatively small scale. In other words, "pollinator-friendly" farming practices would not only aid pollination of agricultural crops, but also serve as a key element in the overall conservation strategy for wild pollinators, and often aid other wild species as well.

H. Of course, not all farmers will be able to implement all of these practices. And researchers are suggesting a shift to a kind of polyglot agricultural system. For some small-scale farms, native bees may indeed be all that's needed. For larger operations, a suite of managed bees – with honeybees filling the generalist role and other, native bees pollinating specific crops – could be augmented by free pollination services from resurgent wild pollinators. In other words, they're saying, we still have an opportunity to replace a risky monoculture with something diverse, resilient, and robust.

Questions 27-30

Do the following statements agree with the claims of the writer in Reading Passage 3?

YES	If the statement agrees with the claims of the writer
NO	If the statement contradicts the claims of the writer
NOT GIVEN	If it is impossible to say what the writer thinks about this

27. In the United States, farmers use honeybees on a large scale over the past few years.
28. Cleaning farming practices would be harmful to farmers' health.
29. The blue orchard bee is the most efficient pollinator among native bees for every crop.
30. It is beneficial to other local creatures to protect native bees.

Questions 31-35

Choose the correct letter, A, B, C or D.

Write your answers in boxes 31-35 on your answer sheet.

31. The example of the "Fruitless Fall" underlines the writer's point about
 - A needs for using pesticides.
 - B impacts of losing insect pollinators.
 - C vulnerabilities of native bees.
 - D benefits in building more pollination industries.
32. Why can honeybees adapt to the modern agricultural system?
 - A the honeybees can pollinate more crops efficiently
 - B The bees are semi-domesticated since ancient times.
 - C Honeybee hives can be protected away from pesticides.
 - D The ability of wild pollinators using to serve crops declines.

33. The writer mentions factories and assembly lines to illustrate

- A one drawback of the industrialised agricultural system.**
- B a low cost in modern agriculture.**
- C the role of honeybees in pollination.**
- D what a high yield of industrial agriculture.**

34. In the 6th paragraph, Winfree's experiment proves that

- A honeybee can pollinate various crops.**
- B there are many types of wild bees as the pollinators.**
- C the wild bees can increase the yield to a higher percentage**
- D wild bees work more efficiently as a pollinator than honey bees in certain cases**

35. What does the writer want to suggest in the last paragraph?

- A the importance of honey bees in pollination**
- B adoption of different bees in various sizes of the agricultural system**
- C the comparison between the intensive and the rarefied agricultural system**
- D the reason why farmers can rely on native pollinators**

Questions 36-40

Complete each sentence with the correct ending, A-F, below.

Write the correct letter, A-F, in boxes 36-40 on your answer sheet

36. The headline of colony collapse disorder states that

37. Viewpoints of Freitas manifest that

38. Examples of blue orchard bees have shown that
39. *Centris tarsata* is mentioned to exemplify that
40. One finding of the research in Delaware Valley is that

- A native pollinators can survive when a specific plant is supplied.
- B it would cause severe consequences both to commerce and agriculture.
- C honey bees can not be bred.
- D some agricultural landscapes are favorable in supporting wild bees.
- E a large scale of honey bees are needed to pollinate.
- F an agricultural system is fragile when relying on a single pollinator