

1 **SOURCES OF INFORMATION & THEIR EXTENT OF UTILIZATION BY ACTORS IN**
2 **AKIS FOR BETEL VINE GROWERS IN NADIA DISTRICT OF WEST BENGAL**

3 **Abstract:**

4 Studying Agriculture Knowledge Information System (AKIS) in terms of generation,
5 dissemination, transformation, utilization, storage and retrieval of knowledge and information
6 is needed for agriculture development. A study was conducted in Nadia district of West
7 Bengal and Betel vine growers, Extensionist, Researchers were considered as respondents.
8 Cultivation of betel vine is one of the most important horticultural crops as it is gradually
9 increasing its popularity in the Nadia district as cash crop. It is observed that in-adequate
10 information regarding Betel vine production in the sampled areas, almost cent percent
11 growers were using their own traditional planting materials since long and growing their
12 crops with their indigenous knowledge, skill and their past experiences. They have little
13 awareness regarding the improved method of cultivation. The study further indicated that the
14 respondents were receiving better information and technical knowhow about betel vine
15 cultivation from Opinion leader, participating in training programmes, discussing with
16 Extension personnels, input dealers, neighbours and different NGOs and to some extent from
17 electronic media. The respondents treated relatives, neighbours and co-operatives as better
18 credible sources followed by demonstration, campaign, Argil. University expert, Krishi-mela,
19 Leaflet and Input dealers and electronic media to some extent. Establishment of research
20 station, transfer knowledge information system and marketing system might be useful for
21 realising better return on betel vine cultivation and young farmers are quite enthusiastic to
22 cultivate the betel vine and promotion of this crop should be continued in the other parts of
23 the district for gainful employment through need based and location specific technology
24 support system.

25 **Keywords:** (AKIS) Agricultural Knowledge Information System, Researcher,
26 Extensionists, Technology development and transfer, Integration, diffusion and utilization of
27 Information.

28
29 **Introduction:**

30 The present age has been rightly called as an information age. Information has
31 become the most important element for progress in society. According to Kemp “information
32 has been described as the fifth need of man ranking after air, water, food and shelter”.
33 Providing information on farming practice, market information helps farmer make correct

34 decision. Constraints existing in interface between generation, transfer and use of farm
35 innovation should be removed through dual concept of synergy and Agricultural Knowledge
36 Information System (*Saha, 2011*). Effective technology development and transfer depends on
37 an interactive holistic system that is called the ‘agricultural information system’ which
38 includes: a research subsystem; a dissemination sub system; a user subsystem. An
39 agricultural knowledge information system is a system in which agricultural information is
40 generated, transformed, transferred, consolidated, received, utilized and feedback in such a
41 manner that these processes function synergically to underpin knowledge utilization by
42 agricultural producers (*Roling, 1989*). Agriculture Knowledge information System (AKIS) is
43 a system that links the rural peoples and institution to promote mutual learning and generate,
44 share and utilize agriculture related technologies, Knowledge and information, this system
45 integrates farmers, agriculture educators’ research and extortionist to harness knowledge and
46 information from various sources for better farming and improved livelihood. An Agriculture
47 Knowledge information System (AKIS) is intended as a bridge for sharing ideas and
48 principles with various stakeholder.

49 AKIS is defined as “the set of organizations and /or persons, and the links and
50 interaction between them that are engaged in, or manage such processes as the anticipation,
51 generation, transformation, transmission, storage, retrieval, integration, diffusion, utilization
52 of agricultural knowledge and information, which potentially work synergistically to support
53 decision making, problem solving and innovation in agriculture on a domain thereof.”
54 (*Roling and Engel 1991*) .AKIS framework is useful in analysing how farmers are supported
55 by institutions involved in the process of generating and diffusing new knowledge, i.e.,
56 research, extension and education. The underlying feature of the AKIS in that farmers obtain
57 the knowledge and information from many sources and that new knowledge is generated not
58 only by research institutes, but also by many different actors, including farmers themselves
59 (*Van Den Ban, 1996*). The traditional role of the extension organization in less industrialized
60 countries is the transfer of technologies (TOT) developed at the research institutes of farmers.
61 A major role in industrialized countries has always been to learn from the experience of the
62 most successful farmers in order to teach other farmers how they can improve their farm
63 management. Quite often analysis of the AKIS shows that a role other than TOT is more
64 appropriate. This could involve providing farmers with a basket of opportunities and helping
65 them to choose the right one of their situation. Another role of the extension organization can
66 be:

- 67 • to help farmers experiment with new technologies or with new farming system;
- 68 • to gain access to relevant information from a variety of information;
- 69 • to evaluate and interpret this information for their own situation; and
- 70 • to learn from their experiences.

71 Betel vine or Pan (*Piper betel* L) belongs to the family Piperaceae and is a perennial
72 aromatic creeper grown for its leaves. India is the largest producer of betel leaves in the
73 world. It is an important commercial crop and is grown as a cash crop across the states of
74 Andhra Pradesh, Karnataka, Kerala, and Assam, Odisha, Uttar Pradesh and West Bengal. The
75 Indian betel leaves are in great demand in several countries and leaves worth about Rs. 30-40
76 million are exported to European countries (*Guha, 2006*). It is an opportunity for the Indian
77 betel vine growers as well as seller to earn more profit not only within the country but also by
78 exporting .About 20 million people derives their livelihoods directly or indirectly from
79 production, processing, handling, transportation and marketing of betel leaves in India (*Guha,*
80 *2006*). On an average about 66% of such production is contributed by the state of West
81 Bengal where it is cultivated on about 20,000 ha encompassing about 4-5 lakh employing
82 about the same number (4-5 lakh) of agricultural families (*Guha, 2006*). Betel vine
83 cultivation has brought a paradigm shift in the farm economy in West Bengal and offers
84 perennial employment and income to small and marginal farming community because of its
85 capital and labour intensive characteristic (*Chandra & Sagar, 2004*). It is the most important
86 cash crop and its cultivation has already brought a perceptible and conspicuous change in the
87 livelihood security of farmers in Nadia district. However, the betel vine is susceptible to
88 damage caused by insects, rain and wind. Shortage of irrigation can also cause hindrance for
89 the growth of betel vine. High cost of fertilizer and pesticide, fluctuating price, many
90 intermediaries, inadequacy of finance, transport, absence of grading, lack of storage facility
91 also cause of great loss to farmers. In view of the above problems in betel vine cultivation the
92 current study was undertaken for identifying the sources of technological information &
93 their extent of utilization by actors in agriculture knowledge information system for betel
94 vine growers in Nadia district of West Bengal.

95 **Material and methods:**

96 The study has been oriented towards the system approach for analyzing the
97 Agriculture Knowledge Information System of betel vine growers in Nadia district. The
98 present study was undertaken in Nadia district of west Bengal to identify the sources of
99 information & their extent of utilization by actors in agriculture knowledge information

100 system for betel vine growers. Multi-stage stratified sampling procedure was employed for
 101 selection of blocks, villages and betel vine growers. Four blocks namely *Karimpur 1*,
 102 *Karimpur 2*, *Krishnaganj* and *Chakdah* were purposively selected from Nadia district as betel
 103 vine is a major cash crop in this area. Eight villages predominated by betel vine growers
 104 namely *Arabpur*, *Kechuadanga*, *Rajapur*, *Hogolberia*, *Taldah*, *Adityapur*, *Simurali* and
 105 *Anyetpur* were selected purposively from above four mentioned blocks. Two hundred betel
 106 vine growers from the selected villages were selected randomly by selecting 25 farmers from
 107 each village. All the extensionists working in the field of betel vine cultivation in the study
 108 area and all the extensionists (25) were selected for the purpose of study. All the researchers
 109 (10) related with betel vine cultivation in the study area were also interviewed. The primary
 110 data were collected from the sample respondents by semi-structured schedules, pre -tested
 111 earlier through personal interview method in the year 2015-16 and analysed to reveal the
 112 results.

113 **RESULT AND DISCUSSION**

114 The findings of the present study as well as relevant discussions have been
 115 summarised under the following heads. Sources of information are an important
 116 consideration which determines the level of education, exposure and cosmopolitnness. In order
 117 to measure extent of use of sources of information, measurement of frequency use of sources
 118 and channels was followed .The data on source of information were collected on scale point
 119 of Most often, Often, Some times and Never with assigned score were 4,3,2,1 respectively
 120 and information on credibility of sources were collected on scale point, Most reliable,
 121 Somewhat reliable, Unreliable with assigned score were 3, 2, 1 respectively. The total
 122 preference score for each content was calculated and mean score for particular source of
 123 information was worked out, and then ranking was done on the basis of CV percentage. The
 124 data were analysed by using the statistical tools such as mean, standard error and CV (%) and
 125 presented in the table below.

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127
128
129 **Table 1: Sources of information ,extent of use and its credibility** (n =200)

Sources/Channel	Frequency contact				Credibility of Sources/ Channel			
	Mean	Std Error	CV %	Rank	Mean	Std Error	CV %	Rank
Friends	2.250	0.051	32.361	xvii	2.105	0.043	29.124	xvii
Relatives	1.830	0.054	41.399	xxi	1.775	0.051	40.899	xxiv
Neighbour	1.580	0.044	39.298	xix	1.540	0.041	37.869	xxiii

Sources/Channel	Frequency contact				Credibility of Sources/ Channel			
	Mean	Std Error	CV %	Rank	Mean	Std Error	CV %	Rank
Village leader	1.100	0.024	30.227	xiii	1.090	0.020	26.321	xvi
Opinion leader	1.165	0.034	41.069	xx	1.135	0.026	32.666	xviii
Progressive farmer	2.035	0.040	27.595	xi	1.950	0.035	25.054	xv
Youth club	1.035	0.013	17.801	iii	1.025	0.011	15.270	vi
Village teacher	1.015	0.009	12.006	i	1.010	0.007	9.876	iii
Extension personal	1.030	0.014	19.246	v	1.020	0.010	13.760	v
Co-operatives	1.370	0.036	36.814	xvii	1.360	0.035	36.886	xxii
Asst Director Agril / Hort Dev Officer (HDO)	1.045	0.016	22.080	vi	1.035	0.015	20.266	xi
Krishi Prayukti Sahayak(KPS)	1.040	0.014	18.890	iv	1.030	0.012	16.603	viii
Betel leaf Vender	1.020	0.010	13.760	ii	1.005	0.005	7.036	i
Training camp	1.015	0.009	12.006	i	1.005	0.005	7.036	i
Field day	1.065	0.024	31.330	xvi	1.010	0.007	9.876	iii
Village level work shop	1.065	0.024	31.330	xvi	1.010	0.007	9.876	iii
Leaflet	1.085	0.025	33.028	xx	1.030	0.012	16.603	viii
Input Dealers	1.920	0.033	24.132	vii	1.895	0.028	20.759	xii
Panchayet personnel	1.060	0.021	27.800	xi	1.025	0.013	18.134	ix
Krishi Vigyan Kendra	1.055	0.020	27.207	x	1.005	0.005	7.036	i
Agril. University expert	1.045	0.019	25.915	viii	1.015	0.011	15.546	vii
Campaign	1.045	0.019	25.915	ix	1.010	0.007	9.876	iii
Krishimela	1.045	0.020	27.207	x	1.015	0.011	15.546	vii
Research Stations/ Adaptive Farms	1.050	0.021	28.243	xii	1.010	0.010	14.002	v
Bank personal	1.050	0.021	28.243	xii	1.010	0.010	14.002	v
SHG	1.090	0.025	32.112	x	1.050	0.017	22.895	xiv
NGO	1.470	0.039	37.916	xviii	1.420	0.036	36.247	xxi
Folder/Leaflet	1.095	0.024	31.179	xiv	1.060	0.017	22.461	xiii
News paper	1.510	0.039	36.959	xvi	1.455	0.035	34.311	xx
Radio programme	1.080	0.024	31.286	xv	1.040	0.014	18.890	x
TV programme	1.615	0.039	33.817	x	1.555	0.036	32.682	xix
Demonstrations	1.045	0.019	25.915	ix	0.010	0.007	9.872	ii

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131 From the above table it has been found that village teacher (12.006), training camp
132 (12.006) have been assigned by the respondents , as the first rank followed by betel leaf
133 vender (13.760), youth club (17.8010), KPS (18.890), Extension personnel (19.246),
134 ADA/HDO (22.080), Input dealers (24.132), Agril. University expert (25.915),
135 Demonstrations (25.915), Krishi-mela (27.207), KVK (27.207). This indicated that farmers
136 had good contact, good rapport and depending more on the above mentioned sources of
137 information. The respondents had expressed that they have moderate contact with

138 Panchayat personnel (27.800), Research station/ Adaptive farm, Bank personnel (28.243),
139 Village leader (30.277) Folder/Leaflet (31.179), Radio programme (31.286), Field day,
140 Village level workshop (31.330) and least contact with SHG (32.112), friends (32.361),
141 Leaflet (33.028), TV programme (33.817), Cooperatives(36.814,) News paper (36.959),
142 NGO (37.916), Neighbour (39.298), Opinion leader (41.69) Relatives (41.399).

143 Very limited exposures were observed on receiving information from various sources
144 by the respondents. The respondents were receiving information through Opinion leader,
145 training programmes, Extension personnel, input dealer, neighbour and different NGO and to
146 some extent electronic media. It can be apprehended that the respondents were receiving
147 information mainly through individual contact. Similar results were observed by (*Engel*
148 *1997), Pandey (1998) and (Silerova and Lang 2006) with respect to AKIS.*

149 **Credibility of sources:**

150 It was revealed from the above table that the respondents treated Betel leaf vender
151 (7.036), Training camp (7.036) and Krishi Vigyan Kendra (7.036) as most credible source of
152 information and ranked first among all sources/channels, followed by Demonstration
153 (9.8720), and Campaign (9.876) Argil. university expert (15.546), Krishi-mela (15.546),
154 KPS, Leaflet (16.603), Panchayat personnel(18.134), Radio programmes (18.890),
155 ADA/HDO (20.266), Input dealers (20.759), Folder, leaflet (22.461), SGH (22.895),
156 Progressive farmer (25.059), Village leader (26.321), Friends (29.124), Opinion leader
157 (32.666), TV programmed (32.682), News paper (34.311), NGO (36.247), Cooperatives
158 (36.886), Neighbour (37.869), Relatives (40.899).

159 The respondents were gaining better credibility of sources from relatives, neighbour
160 and co-operatives. It can be also concluded that respondents were receiving of credibility of
161 sources from print and electronic media to some extent.

162 **CONCLUSION**

163 The study revealed that Agricultural Knowledge Information System (AKIS) for the
164 past few decades has made an impressive linking in the minds and thoughts of policy makers,
165 development planners, extension as well as researchers as a mechanism to build linkage
166 between farmers, extension workers and researchers. AKIS in betel vine cultivation has
167 gained momentum after establishment of Horticulture Department and KVK in West Bengal
168 at various district head quarters. Physical, social and cultural environments, land availability
169 and needed inputs, the sustainability of utilities and communication network are the
170 important factor that affects the success of the AKIS in betel vine cultivation. The key
171 findings of the study can also provide significant benefits not only for the betel vine growers

172 but also to the Extension workers, Researcher, related developmental departments and district
173 administration for effective implementation of the agriculture knowledge information system
174 (AKIS). A number of practical implementations such as policy considerations, linkages with
175 stakeholders and marketing could be helpful for the betel vine growers of Nadia district for
176 better livelihood. It is concluded that information delivery system should be strengthened to
177 increase the effectiveness of existing agricultural research extension and farmers linkage and
178 more priorities should be given on advocacy, capacity development and integration of
179 information resources.

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