

Possibilities and Usefulness of Digitalization in Agriculture Sector

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Abstract: Madhya Pradesh is primarily an agriculture state. About 73 percent population of the state is rural, which is directly or indirectly depends on agriculture. Whereas 44 percent of the population here dependent on agriculture and agro related activities for its livelihood. It's 78 percent of working population is directly involved in agriculture. In the competitive era major challenges in front of Indian economy are stagnating farm income and fragmented land holdings. Under such circumstances, the concept of digitization of agriculture sector becomes more vital. There is necessity of empowering the rural community by creating digital infrastructure, providing various digital services (email, Smart phone, Internet and WAP) and promoting digital literacy. Government has taken many initiatives in this regard like Kishan call centre, e-Choupal, Kishan Credit Card, remote sensing (via satellites), geographic information systems, and crop and soil health monitoring, and livestock and farm management, among other applications. This paper focuses on understanding the concept of digital agriculture and how digitization is useful for the socio, economic upliftment for the farmers.

I kjk'k&e; i nsk e[; : i ls , d k'k ijkku jkt; g§ jkt; dh yxHkx 73 ifr'kr tul a[; k xkeh.k g§ tks fd iR; {k ; k vi R; {k : i ls k'k ij fuhkj g§ jkt; dh vfk 0; oLFkk e[k'k , oI Ic} l ok, a yxHkx 44 Áfr'kr fgLI nkjh dk ; kxnu djrh g§ vks bl dh dk; l khy tul a[; k dk 78 ifr'kr l hks k'k e[l gyu g§ A k'kdkks e[vks; , oI Hkx forj.k dh nfV l scgr vI ekurk, g§ vr% c<rh g§ i fLi /kkz , or cnyhi rduhd ds bl nk§ e[k

f'k ds {ks- e fmftVykbt'sku dñ hkfedk ij / ku nsk vko'; d gA k'f'k dks l kekftd vkfFkld vkJ i ; kbj . kh; : i l s ykhnk; d vkJ fVdkm cokus ds fy, l puk i kpkfxdh t s b&esy] bñj uñj]LekVQku]WAP% ds }kj k k'f'k dks vkJ cgrj cokus dñ fd; k dks fmftVykbt'sku dgrs gA l j dkj }kj k k'f'k e fmftVykbt'sku dñ fn'kk eñ foftHku dk; z fd; s tk jgs g& t s fall ku l sk] fall ku dñky l tVj] b&pkf ky] fall ku dñMV dñM] vkluyku eñ e dñ tkudkjñ xkeh.k Kku dñn] b&xouññ k'f'k ; kstuk br; kfnA

iLr̥t' kks/k i = e fmftVykbt's ku dh mi kns rk , oa i kkoukvka ei Ñf"k {ks= ei Ñ"kdks ds vkfFkld l kekftd fodkl ds fy, fmftVykbt's ku ds i z kx , oa mudh l eL; kvk ds fy, /; ku dsfUnr fd; k x; k qA

IndexTerms—Socio-economic, Digitalization, E-commerce, Agriculture, online information.

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Hkkj r e vf/kdkd k tul a; ka vHkh Hkh **Ք**"k ij fuHkj g§ **Ք**"k u droy vktkfodk dk eq[; k L=kr cfYd Hkkj r dh thMhi h e bl dk cmk ; kxgnku g§ fQj Hkh vf/kdkd k fd1 kuks dh vktkfud rd igpa ugh g§ k vktfkid l oifk.k 2017&18 ds vuq kj Hkkj r e 2050 rd **Ք**"k {k= alh dk; Zkhy l a; k 58-02 ifr'kr ls ?V dj 25-07 ifr'kr gks tk, xhA vr%; g vko'; d g§ fd **Ք**"k ds {k= e e' ktfudj.k , oafMftVykbt's ku dks i kRI kqo fn; k tk; A

e/; ins'k ds vukFkld l o[k.k 2017&18 ds vuŋ kj foxr 5 o"kk̩ eŋ e/; ins'k ꝑf"k of} nj 18 ifr'kr jgh g§ e/; ins'k ifr 0; fDr
vk; 79907 : g§ tks fd o"kl 2016&17 es 73268 : g§ vFkk̩ ifr 0; fDr vk; eŋ foxr o"kl dh viŋkk 9-6 ifr'kr dh of} gþl gA e/; ins'k eŋ
ꝑf"k {ks l s iklr okf"kl ifr 0; fDr vk; 36960 : g§ftl eŋ l s ꝑf"k l x} {ks l s iklr vk; 9943 : g§ x§ fdl h 0; ol k; l s iklr vk; 6138
: gA [1]

' kks/k i fof/k

v/; ; u dk mnns' &

1 U; kn' k^l k["]kdk^s dh l kekftd , oa vkkFkld fLFkfr dk v/; ; u djuk A

2 k^fk {ks= ei fmftV ykbzts'ku ds Lrj dk i rk yxukA

'kks/k i fj dYi uk&

iLrp v/; u bl i fj dYi uk ij vk/kkfjr vf/kdkd k "kd fMftVykbt's ku l s ykHkkfor gks jgs gAvkdmks dk I dyu& iLrp v/; u ej; r% i kFfed, oaf}rh; d vkdMks ij vk/kkfjr g vkdMks dk I axg.k iR; {k 0; fDrxr vuq vkk fo/f/k }kjk fd; k x; k g vkdMks ds I axg.k ds fy, vuq iph, oai k{kkrkdkj nkuk rdudh dk i kx fd; k x; k g vuq iph e U; kn' k "kdks dh I kekfd, oavkfkld fo'k'krkvka l s l dfr foHkuu i tu t s mudh f'k{k vkk; , oaf 0; ol k; dh i dfr vrkn l s l dfr kr i tu l feefyr fd; s x; s g v/; u ds vrxxr vko'; drkud k jf}rh; d vkdMks ds fy, "kd foHkkx e/; i n'k dk okf"kd ifronu] "kd"k l kf[; dh;] l jdkjh i =&f=dkvka l ekpkj i=k jkT; Lrjh; ctV rFkk foHkkx }kjk l e; &l e; i ddkf'kr fji kMks dk v/; u fd; k x; k gA v/; u dk {k=&

iLrp 'kkyk i = e U; u dk {k= e- i z ds gjnk ftys dks puk x; k g ftys es 3 mi eMy 6 rgl hy vkj 3 Cykld gA ftys dk {k=Qy 2644 oxl fdeh- gA 2011 dh tux.kuk ds vuq kj ftys dh tul a; k 570302 gA ftys dh I k{kjrk nj 74-04 i fr'kr gSL=h i q "k vuq kr 932 i fr gkj i "k g gjnk ftys e U; r% l k kchu xq, oax dk mRi knu fd; k tkkr gA 2001 l s 2011 ds chp fodkl nj 20-21 i fr'kr gA v/; u gq U; kn' k "kdks dk p; u&

iLrp 'kkyk i = e U; kn' k "kdks dk p; u n U; kn' k "kd i fr ds vk/kkj ij fd; k x; k g A ftl e gjnk, oavfjeuh l s 40 "kdks U; kn' k gq p; fur fd; k x; k gA

vkdMks dk fo' ysk.k & iLrp v/; u e fn; s x; s mnas'; k dh i fr gq vkdMks dk, df=dj.k rFkk mudk l kj.kh; u dj fo' ysk.k fd; k x; k gA ftl ds fy, s foHkuu l kf[; dh; rdudhks dk i kx fd; k x; k g t & vks r fo/f/k i fr'kr fo/f/k l gl a/k xqkka fo/f/k vknA "kdks dh I kekfd fLFkfr dk v/; u&

gjnk ftys e U; kn' k "kdks dh I kekfd fLFkfr dk v/; u foHkuu rkfydkvka ds ek/; e l s Li "V fd; k x; k gA

rkfydk dekhd &1-1
"kdks dh f'k{k ds Lrj, oavtkfr ds vk/kkj ij oxhdj.k

शिक्षा का स्तर	v-tk-		v-t-tk-		vU; fi - oxl		I kekU;		dly	
	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%
अशिक्षित	5	12.5	1	2.5	2	5	1	2.5	9	22.5
i kFfed	0	0	0	0	7	17.5	2	5	9	22.5
ek/; fed	3	7.5	1	2.5	6	15	3	7.5	13	32.5
efVd	1	2.5	0	0	2	5	0	0	3	7.5
mPpf'kf{kr	0	0	1	2.5	3	7.5	2	5	6	15
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkfydk dekhd 1-1 e n'k k x; k fd gjnk ftys e 22-05 i fr'kr vf'kf{kr "kd g 32-05 i fr'kr "kd vkbh d{k ds l ed{k g 1-05 i fr'kr "kd mPp f'kf{kr g A "kdks e vf/kdkd k ek/; fed f'k{k i klr d"kdks dk g ts dly f'kf{krks dk 77-05 i fr'kr gA

rkfydk dekhd &1-2
"kdks dh "kd"k Hkfe, oavtkfr ds vk/kkj ij oxhdj.k

df"k Hkfe (gDVs j e)	v-tk-		v-t-tk-		vU; fi - oxl		I kekU;		dly	
	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%	"kdks dh l a; k	%
2 gDVs j l s de	5	12.5	3	7.5	8	20	4	10	20	50
2-5	2	5	0	0	8	20	3	7.5	13	32.5
5-10	2	5	0	0	4	10	0	0	6	15
10 gDVs j l s vf/kd	0	0	0	0	0	0	1	2.5	1	2.5
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkfydk dekhd 1-2 e n'k k x; k g fd 50 i fr'kr U; kn' k "kd , s g ftuds i kl 2 gDVs j l s de "kd"k Hkfe g tcfd 32-05 i fr'kr "kdks ds i kl 2&5 gDVs j "kd"k Hkfe g tcfd l cl s de 2-05 i fr'kr "kd , s g ftuds i kl 10 gDVs j l s vf/kd "kd"k Hkfe g bues Hk vU; fi NMk oxl ds U; kn' k "kdks ds i kl l okf/kd "kd"k Hkfe gA

"kdks dh vkkfkld fLFkfr dk v/; u&

gjnk ftys ds U; kn' k "kdks dh vkkfkld fLFkfr dks foHkuu rkfydkvka dks ek/; e l s n'k k , oavfjeuh l s "V fd; k x; k gA

rkfydk dekhd &2-1

"kdks dh vkkfkld fLFkfr , oavtkfr ds vk/kkj ij oxhdj.k

ekfl d vk;	v-tk-		v-t-tk-		vU; fi - oxl		I kekU;		dly	
	"kdks	%	"kdks	%	"kdks	%	"kdks	%	"kdks	%

	dh l a[; k		l a[; k		l a[; k		l a[; k		l a[; k	
10000 l s de	5	12.5	3	7.5	11	27.5	4	10	23	57.5
10000 -30000	3	7.5	0	0	5	12.5	3	7.5	11	27.5
30001-50000	0	0	0	0	3	7.5	1	2.5	4	10
50000 l s vf/kd	1	2.5	0	0	1	2.5	0	0	2	5
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkfydk dlekd 2-1 ei "kdkls dh ekfl d vk; dks n'kkz k x; k g§ 57.5 ifr'kr "kdkls dh "kxr ekfl d vk; 10000 : l s de g§ rFkk ek= 5 ifr'kr "kdkls dh vk; 50000 : l s vf/kd g§ ; g 5 ifr'kr vk; oxz okys os "kd g§ ftuds i kl 10 , dM+l s vf/kd "k Hkh g§ vr% ; gk ij Hkh vkcbl h oxz ds "kd g§ tks fd 10000&30000 ekfl d vk; iklr dj jgs g§ budk ifr'kr 27.5 g§

rkfydk dlekd &2-2

"kdkls ds ekfl d 0; , oa tkfr ds vk/kkj ij oxhldj.k

ekfl d 0; ;	v-tk-		v-t-tk-		vU; fi - oxz		l keku;		dly	
	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%
5000 l s de	3	7.5	1	2.5	12	30	3	7.5	19	47.5
5000 l s 10000	5	12.5	2	5	4	10	2	5	13	32.5
10000 l s 20000	1	2.5	0	0	2	5	3	7.5	6	15
20000 l s vf/kd	0	0	0	0	2	5	0	0	2	5
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkfydk dlekd 2-2 ds "kdkls dk ekfl d 0; ; n'kkz k x; k g§ ftue 47.5 ifr'kr "kd , l s g§ ftuak ekfl d 0; ; 5000 : l s de g§ rFkk 5 ifr'kr "kd , l s g§ ftuak ekfl d 0; ; 20000 : l s vf/kd g§ mijkDr nkuls rkfydkvks dk v/; ; u dj ij Kkr grkr g§ fd 10000 : ifr ekgl vk; iklr djus okys "kdkls dk ekfl d 0; ; 5000 : l s de g§ tcfd 50000 : l s vf/kd vk; iklr djus okys "kdkls dk ekfl d 0; ; 20000 l s vf/kd g§

rkfydk dlekd &2-3

"kdkls ds vks r vk; , oa tkfr ds vk/kkj ij oxhldj.k

Tkkfr	Ekkfl d vk;	Okf"kd vks
v-tk-	14454.00	173444.44
v-t-tk-	3750.00	45000
vU; fi - oxz	16783.00	201400
l keku;	13229.00	158750

rkfydk dlekd 2-3 ei "kdkls dh vks r vk; dks n'kkz k x; k g§ tgk ij oxhldj ckWk x; k g§ bue vkcbl h oxz ds "kd l cl s vf/kd vFkk 16783-00 : ekfl d rFkk 201400 : okf"kd iklr dj jgs g§ tcfd vuifpr tu tkfr oxz ds "kd l cl s de vFkk 3750-00 : ekfl d vk; rFkk 45000 : okf"kd vk; iklr dj jgs g§ mijkDr rkfydk dlekd 1-2 , o2-3 dk nyukRed v/; ; u crkrk g§ vuifpr tutkfr oxz ds "kdkls ei f'k{kk , oa vk; dk Lrj vU; oxk dh vi{kk l cl s de g§

rkfydk dlekd &2-4

"kdkls ds __.kxLrk , oa tkfr ds vk/kkj ij oxhldj.k

__ .kxLrk	v-tk-		v-t-tk-		vU; fi - oxz		l keku;		dly	
	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%	"kdkls dh l a[; k	%
__ .kxLrk	6	15	0	0	9	22.5	7	17.5	22	55
vU;	3	7.5	3	7.5	11	27.5	1	2.5	18	45
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkfydk dlekd 2-4 ei gjnk ftys ds "kdkls dh __.k Lohdk; l rk dks n'kkz k x; k g§ ; gkW ij 55 ifr'kr "kdkls us __.k mi ; kx fd; k tcfd 44 ifr'kr "kd , l s g§ ftuak __.k ugh fy; k g§ __.k yus okys "kdkls ei Hkh vfkdrj 22.5 ifr'kr "kd vkcbl h oxz ds g§ ; gh oxz T; knk f'k{kr Hkh g§ ftuak ifr'kr 17.5 g§ "kdkls dh vk; , oa fmftVykbt'sku&

bl v/; k; ei ፻"kdks ei fmFTKVykbts ku ds Lrj dks Kkr djus ds fy, muds }kjk b\jus\ mi ; kx dks vk/kkj ekudj v/; u fd; k x; k g፻
፻"kdks ds }kjk b\jus\ mi ; kx ds fy, ekckbly Qku] dEl; \Vj] ys\ VKI vkfn dk i ; kx fd; k tkrk g፻
rkfydk dtekid &3-1

	ቍ"ካልስ ደህንና ክ	ቻ የ ቻ
b&j uV mi ; kxdrkz	32(80%)	15740.00
b&j uV mi ; kx ugha djus okys	82(20%)	9896.00
dy	40(100%)	14935.00

rkfydk dkckd 3-1 e¹ gjnk ftys ds **ף**"kdkls dlk b¹jus¹ mi ; kx , oa vks r vk; dks n'kk¹ k x; k g¹ tgkw 80 ifr'kr **ף**"kd b¹jus¹ dk mi ; kx dj 15740-00 : vks r vk; iklr dj jgs g¹ tcfd 20 ifr'kr **ף**"kd tks fd b¹jus¹ dlk mi ; kx ugh djrs vks vks r vk; ek= 9896 : ekfl d iklr dj jgs g¹ vr% b¹jus¹ mi ; kx djus okys **ף**"kdkls dh vks r vk; b¹jus¹ mi ; kx ugh djus okys **ף**"kdkls dh vks r vk; dh vi¹kk 39 ifr'kr vf/kd g¹

rkfydk d~~ekd~~ &3-2

કુ"kdks ds b\j u\ mi ; kx , oa tkfr ds vk/kkj i j oxhldj . k

	v-tk-		v-t-tk-		vU; fi - oxl		I kekU;		dly	
	Φ"kdks dh l a[; k	%	Φ"kdks dh l a[; k	%	Φ"kdks dh l a[; k	%	Φ"kdks dh l a[; k	%	Φ"kdks dh l a[; k	%
bʌj uV mi ; kxdrkz	7	17.5	2	5	15	37.5	7	17.5	31	77.5
bʌj uV mi ; kx ugha dju s okys	2	5	1	2.5	5	12.5	1	2.5	9	22.5
dly	9	22.5	3	7.5	20	50	8	20	40	100

rkf ydk d^{ek}k 3-2 e^g gj nk ft ys ds **q**"kdks dks muds b^Wj u^V mi ; k^x dj us ds v^k/kkj ij ox^Wkr fd; k x; k g^A tg^W 77-5 i fr'kr **q**"kdks }jk b^Wj u^V dk mi ; k^x fd; k tk jgk g^A tcf d 22-5 i fr'kr **q**"kd bul s vu f^WKK g^A bu e^Wkk b^Wj u^V T; knk mi ; k^x dj us okys v^kch^I h ox^Wl dk i fr'kr 37-5 g^A tks r^Wuk Red #i l s ck d^h ox^Wl s l c l s v^f/kd g^A

rkfydk dækð &3-3

d"kdks ds __.k ds mn̄ns ; k̄s ds v̄k/kkj i j oxh̄ldj .k

_.k dk mnññs;	ቁ"kdks dh l a[; k	%
df"k __.k	19	86.36
xg __.k	1	4.55
vU;	2	9.09
dy	22	100

r^ukydk d^zekd 3-3 es k^u"kdkls dks muds }jkj fd; s tk jgs __.k ds mnns ; kx ds vk/kkj ij oxh^uk^ur fd; k x; k g^u tgk^uLi "V g^u fd vf/kdk k^u"kd vFkk^u 86-36 i fr'kr k^u"kdkls }jkj __.k dk mi ; kx k^uf"k g^uq fd; k x; k g^u tcf^ud 4-55 i fr'kr __.k xgdk; l ds mnns ; g^uq mi ; kx fd; k x; k g^u vr% Li "V g^u fd g^unk ftys ds k^u"kd k^u"k dk; l g^uq __.k dk mi ; kx vf/kd djrs g^u

rkfydk dækad &3-4

କୁ"କଳକ ଦ ଏକଫି ଦ ବକ; , ଓ ବାଜୁଯାଶ ମି ; କଥ ଦସ ବକ/କକ୍ଜ ଇ ଜ ଓଖାଲଦିଜ .କ

ekfl d vkl	Φ"kdks dh l a[; k	bʌj uʌv mi ; kɔdrkz	bʌj uʌv mi ; kɔdrkz i fr'kr
0-10000	23	17	73.91
10000-30000	11	8	72.73
30000-50000	4	4	100.00
50000-100000	2	2	100.00
dy	40	31	77.50

rkfydk dækð &3-5

ek/; eku	bʌj uSV mi; kɔdrkl
----------	-----------------------

5000	73.91
20000	72.73
40000	100
75000	100
Lkg% r/c/k xq kkd	0.851

rkfydk dked 3-4 , oa 3-5 ds vuq kj gjnk ftys e 10000 rd dh vk; oxz ds vrxtk dly 23 क"kd i k; s x, g§ ftuea ls bMjuV mi ; kx djus okys क"kdks dh I a[; k l okf/kd vFkkdr 17 g§ tks dly bMjuV mi ; kx djus okys क"kdks dk 73-91 ifr'kr gA mPp vk; oxz okys 50000 : ls vf/kd rd ds क"kdks dh I a[; k 02 g§ rFkk buet bMjuV mi ; kx djus okys क"kdks dh I a[; k Hkh 02 gA

rkfydk dked 3-5 e क"kdks dh vk; , oa bMjuV mi ; kx djus ds vk/kkj ij I g% r/c/k xq kkd Kkr fd; k x; k gA bMjuV mi ; kx , oa क"kdks dh vk; ds e/; mPp /ukkRed I g% r/c/k 0-85 i k; k x; k gA ** vr% v/; u dh 'kkk i fjdYi uk vf/kdkd k क"kd flmtVykbt's k ls ykHkkfuor gks jgs gA I R; fl) gkrh gA**

vr% ge dg I drs g§ fd bMjuV mi ; kx djus ls क"kdks dh vk; e of) gks jgh gA
fulda"kl &

i Lnr fo'ysk.k ls Li "V gkrk g§ fd orleku e क"kd as {ks= e fmftVykbt's ku dh mi ; kfrk ckrh tk jgh gA Nf"krk vk; , oa fmftVykbt's ku 1bMjuV mi ; kx ds chp mPp Js kh dk /ukkRed I g% r/c/k 10-851% i k; k x; k gA

gjnk ftys dk I o[k.k djus ij i k; k x; k fd ; gkW ds 23 ifr'kr क"kd vHkh Hkh bMjuV ds mi ; kx ls ofpr gA f'k{kk dk Lrj N"kdks e 77-5 ifr'kr gA tks ek/; fed o i kFfed Lrj dh gAmPp f'k{kr क"kdks dk ifr'kr 15 g§ tks fodkl e vojk& mRi luu djrk gA vf/kdkd k क"kdks rd __.k I fo/kvk ahi igtp ugh gA yxHkx i R; d क"kd dk cfcl e [krk gkus as i 'pkv Hkh os __.k Lohak; jk dh folfkuu vki pkfj drkvka ds otg ls __.k i klr djus e vi eFkZ gFk Nf"krk Hkh yxHkx 2 gDVs j ls de gA , d vkg 0; ogkfj d I eL; k I o[k.k ds nkjku i k; h x; h fd ykx viuh tkudkjh tks vk; I ckh 0; ; I ckh dk C; kjk I k>k djus es I dkp djrs gA क"kdks e mPp f'k{kk dk Lrj fuE gS vr% Nषकों को उच्च शिक्षा के लिए प्रेरित किये जाने की आवश्यकता है | bUvj uV clk mi ; kx T; knk ls T; knk Nf"kr , oa ml ls I ccf/kr tkudkjh ds fy, djuk pkfg, A efgyk N"kdks Hkh bUvj uV mi ; kx djus d लिए प्रेरित करने की आवश्यकता है |

I nHk

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